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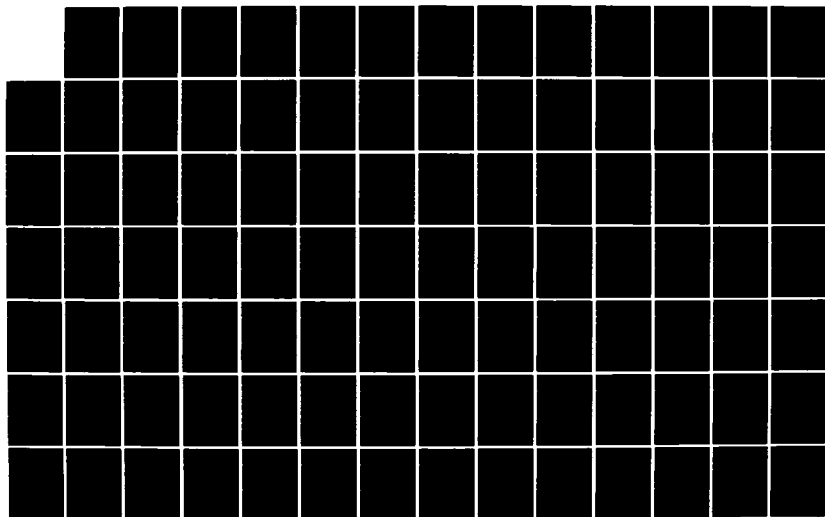
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) ARMY ENGINEER DISTRICT
SAVANNAH GA FEB 76

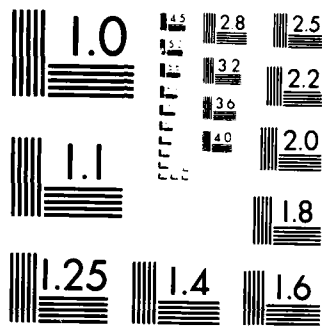
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

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**LAKE MOULTRIE AND SANTEE RIVER
SOUTH CAROLINA**

COOPER RIVER REDIVERSION PROJECT

AD-A149 576

**POWERHOUSE
FOUNDATION ANALYSIS**

**APPENDIX A
SUBSURFACE EXPLORATION**

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JAN 25 1975
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**U. S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA 31402
FEBRUARY 1976**

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COOPER RIVER REDIVERSION PROJECT

POWERHOUSE FOUNDATION ANALYSIS

APPENDIX A

Accession For	
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U.S. ARMY ENGINEERING DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FEBRUARY 1976

COOPER RIVER REDIVERSION PROJECT
POWERHOUSE FOUNDATION ANALYSIS

APPENDIX A

(Bound in Separate Volume)

SUBSURFACE EXPLORATION

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PLATES

<u>Plate</u>	<u>Title</u>
1	EXCAVATION AND BORING LOCATION PLAN
2	POWERHOUSE CROSS SECTIONS -ALONG BASELINE (A-A') -AT BASELINE STA. 599+50 (B-B')
3	POWERHOUSE CROSS SECTIONS -AT BASELINE STA. 597+75 (D-D') -AT BASELINE STA. 589+67 (C-C')

COOPER RIVER REDIVERSION PROJECT
POWERHOUSE FOUNDATION ANALYSIS

SECTION 1

SAVANNAH DISTRICT CORE BORING FIELD LOGS

U.S. ARMY ENGINEERING DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FEBRUARY 1976

N 581,170 E 2,325,550

Hole No. 13

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 8 SHEETS	
1. PROJECT Cooper River Rediversion		Southern Atlantic	St. Stephen, S.C.	10. SIZE AND TYPE OF BIT 1 3/8 I.D. Split spoon & 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
2. LOCATION (Coordinates or Station) Sta. 593+00 on CL		12. MANUFACTURER'S DESIGNATION OF DRILL Damco			
3. DRILLING AGENCY Savannah District		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN: 58 DISTURBED 0 UNDISTURBED			
4. HOLE NO. (As shown on drawing title and file number) 13		14. TOTAL NUMBER CORE BOXES 13			
5. NAME OF DRILLER T.W. Scott		15. ELEVATION GROUND WATER 61.4' 20 Oct. 70			
6. DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.		16. DATE HOLE 16 Oct. 70 STARTED 23 Oct. 70 COMPLETED			
7. THICKNESS OF OVERBURDEN 90.9'		17. ELEVATION TOP OF HOLE 60.09			
8. DEPTH DRILLED INTO ROCK 100.0'		18. TOTAL CORE RECOVERY FOR BORING 91			
9. TOTAL DEPTH OF HOLE 190.9'		19. SIGNATURE OF INSPECTOR G.J. Kraynak, Geologist			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	~ CORE NO. 190.9' WC %	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d		i	0 20 40 60 80 100
			SM- Tan silty fine sand	8.1	59	8
				15.5	60	10
			Fine sand		61	23
			Fine & medium sand		62	20
					63	25
					64	20
					65	19
			SC- Tan Medium & coarse clayey sand	21.1	66	12
				18.3	67	19
					68	10
					69	11
					70	23
					71	25
			SP- Tan silty fine sand		72	28
			CH- Greenish gray fat clay with thin layers fine sand	29.5	73	32
					74	27
					75	38
					76	50
					77	75
					78	100
					79	90
					80	70
					81	100
					82	100
					83	100/0.3'
			SM- Gray silty fine sand	47.1	84	65
					85	30
					86	40
					87	35
					88	30
					89	30
					90	6
					91	8
			SM- Greenish gray silty fine sand with shell fragments	26.9	92	12
					93	9
					94	22
					95	43
					96	100/0.2'
					97	28

Continued on Sheet #2

Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT
Number required to drive 13/8" 10 split spoon with 140 lb. hammer falling 30"

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
60.09

Hole No. 13

PROJECT

Cooper River Rediversion

INSTALLATION








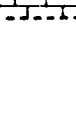
St. Stephen, S.C.

SHEET 2





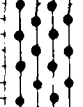



OF 8 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					0 20 40 60 80 100	
	70		Gray silty fine sand		98 35 99 57 100 70 101 50 102 50 103 100/0.6' 104 100/0.8' 105 52 106 54 107 45 108 25 109 46 110 39 111 49 112 38 113 43 114 100/0.8' 115 100/0.9' 116 35 117 100/0.3'	
-30.8'			Black fine sandy silt top of Rock 90.9'		118 100	
92			Shale, black, fine grained, dense fissility not well developed slightly indurated, 1.7' to 98.6' Hard Dense zone	92 RQD-48		NOTE: Scale change at 90.0' Pull #1 90.9' to 95.9' Run 5.0', Rec. 4.6', CLO. 4'
94					1	
96			96.6' to 97.4' Hard dense zone			
98			98.6' to 100.0' Hard Dense zone	100 RQD-40		Pull #2 95.9' to 100.9' Run 5.0', Rec. 5.1', CGO. 1'
100					2	
			--Continued on Sheet #3--			

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 60.09		Hole No. 13	
PROJECT			INSTALLATION		SHEET 3 OF 8 SHEETS	
Cooper River Rediversion			St. Stephen, S.C.			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Shale, black, fine grained Dense, fissility not well developed, slightly indurated.			Pull #2 Continued
	102					
				94 RQD-84		Pull #3 100.9' to 105.9' Run 5.0', Rec. 4.7', CL0.3'
-43.5			10° Contact		2	
	104		Limestone, gray, fossiliferous much shell fragments in finer limey matrix, well indurated.			
			105.4' to 105.9' Unindurated			
	106					
	108		108.5' to 109.2' Unindurated	98 RQD-76		Pull #4 105.9' to 110.9' Run 5.0', Rec. 4.9', CL0.1'
	110		110.4' to 110.9' Unindurated		3	
			110.9' to 111.4' Unindurated			
	112					
	114		114.8' to 115.9' Unindurated	100 RQD-64		Pull #5 110.9' to 115.9' Run 5.0', Rec. 5.2', CG0.2'
			115.9' to 116.5' Dense hard zone		4	
	116		Continued on Sheet #4			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 13		
PROJECT		INSTALLATION		SHEET 4 OF 8 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	ROD OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	118		Limestone, gray, fossiliferous much shell fragments in finer limey matrix, well indurated	98		Pull #6 115.9' to 120.9' Run 5.0', Rec. 4.9', CLO. 1'
	120		120.6' 10° Contact SM- Light gray calcareous silty fine sand			
-60.5	122		Sandstone, light gray, fine grained calcareous, well indurated			
	124		SM- Light gray calcareous silty fine sand	98 ROD-18		Pull #7 120.9' to 125.9' Run 5.0', Rec. 4.9', CLO. 1'
	126		SM- Dark gray calcareous silty fine sand		5	
-65.8	128		125.9' Horizontal Contact Limestone, gray fossiliferous much coarse shell fragments in finer limey matrix, well indurated. 127.3' to 127.8' Hard, Dense	94 POD-74		Pull #8 125.9' to 130.9' Run 5.0', Rec. 4.7', CLO. 3'
	130		SM- Dark gray, calcareous silty fine sand		6	
-69.7	132		Limestone, gray, fossiliferous with pockets of silty fine sand 131.2' to 132.6' Hard, Dense			Pull #9 130.9' to 135.9' Run 5.0' Rec 4.7' CLO. 3'
-71.1			Continued on Sheet #5			

4

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 60.09		Hole No. 13	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 5 OF 8 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	134		Limestone, gray, fossiliferous much shell fragments in finer limey matrix, with pockets of silty fine sand well indurated 132.6' to 135.9' Unindurated	94 RQD-62	6	Pull #9 Continued
	136		136.1' to 136.7' Hard, Dense			
	138		137.5' to 137.9' Hard, Dense	92 RQD-60	7	Pull #10 135.9' to 140.9' Run 5.0', Rec. 4.6', CLO 0.4'
	140		139.8' to 140.1' Hard, Dense			
-80.8	142		SM- Light gray silty fine sand with occasional thin layers of ML- Dark gray fine sandy silt			
	144			78 RQD-0		Pull #11 140.9' to 145.9' Run 5.0', Rec. 3.6', CLO 1.4'
	146				8	Pull #12 145.9' to 150.9' Run 5.0' Rec 4.7' CLO 1.3'
-87.2	148		Limestone, gray, fossiliferous less coarse shell fragments in finer limey matrix well indurated.			
-----Continued on Sheet #6-----						

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

60.09

Hole No. 13

PROJECT



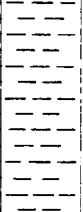

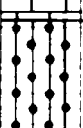
Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 6

OF 8 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-90.8	150		Limestone, gray, fossiliferous less coarse shell fragments in finer limey matrix with pockets of silty fine sand, well indurated.	100 RQD-66	8	Pull #12 Continued
	152		SM- Gray, silty fine sand with shell fragments			
	154		Shale, black, very fine grained, fissility not well developed with minor lenses of limestone slightly indurated 153.4' Shale parting 153.7' Shale parting 154.2' to 154.8' Unindurated	100 RQD-38	9	Pull #13 150.9' to 155.9' Run 5.0', Rec. 5.6', CGO.6'
-97.2	156		157.3' Horizontal Contact			
	158		Limestone, gray, fossiliferous coarse shell fragments in finer limey matrix, indurated. 158.5' to 158.9' Hard Dense 158.9' to 160.3' Unindurated	100 RQD-46		Pull #14 155.9' to 160.9' Run 5.0', Rec. 5.1', CGO.1'
	160		SM- Gray silty fine sand with thin layers of ML- sandy silt			
	162			72 RQD-54	10	Pull #15 160.9' to 165.9' Run 5.0', Rec. 3.6', CLI.4'
	164		--Continued on Sheet #7--			

6

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE		60.09		Hole No. 13	
PROJECT			INSTALLATION		St. Stephen, S.C.		SHEET 7 OF 8 SHEETS	
Cooper River Rediversion								
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <i>(Drilling time, water, etc. as applicable)</i>		
a	b	c	d	e	f	g		
			SM- Gray silty fine sand			Pull #15 Continued		
			164.2' to 164.5' 45° Contact		10			
			Shale, black, very fine grained					
			fissility not well developed					
			slightly indurated					
166			165.9' to 166.2' SM- Silty fine sand layer					
			167.9' Shale parting					
168			168.6' Shale parting	96		Pull #16 165.9' to 170.9'		
			169.2' Shale parting	RQD-74		Run 5.0', Rec. 4.8', CL 0.2'		
			169.6' Shale parting					
			170.0' Shale parting					
170			170.4' Shale parting		11			
			172.6' 10° Contact					
-112.5			Limestone, gray, fossiliferous					
			Dense, with occasional coarse shell fragments, very well indurated.	96		Pull #17 170.9' to 175.9'		
174			173.9' to 174.1' SM- Silty fine sand layer	RQD-72		Run 5.0', Rec. 4.8', CL 0.2'		
			174.6' to 175.9' SM- Silty fine sand layer					
176			175.9' to 179.9' SM- Silty fine sand (CORE LOSS)		12			
				20		Pull #18 175.9' to 180.9'		
				RQD-20		Run 5.0', Rec. 1.0', CL 4.0'		
178								
180			Continued on Sheet #8					

7

7

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

60.09

Hole No. 13

PROJECT












INSTALLATION

SHEET 8

OF 8 SHEETS

Cooper River Rediversion

St. Stephen, S.C.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS <i>(Drilling time, water loss, depth of penetration, etc., at each interval)</i>
a	b	c	d	e	f	g
			Limestone, gray, fossiliferous much coarse shell fragments in finer limey matrix, well indurated.			
	182		181.6' to 181.8' SM- Silty fine sand layer		12	
-123.3			183.0' to 183.4' Unindurated	94		Pull #19 180.9' to 185.9'
			183.4' Low angle Contact	100-52		Pen 5.0', Rec. 4.7', Cc0.3'
	184		Shale, black very fine grained, fissility not well developed with shelly fine sand layers slightly indurated.			
	186		186.1' to 186.5' 45° Shale parting			
				100	13	Pull #20 184.9' to 190.9'
	188			100-72		Pen 5.0', Rec. 5.1', Cc0.1'
			189.2' to 189.5' 45° Shale parting			
	190		190.1' to 190.4', 190.7' to 190.9' 45° Shale parting			
-118.8'			190.9' Bottom of Hole			

LAB CLASSIFICATIONS

Sample No.

66

-SC

8

-CL

8

-ML

4

-SP-SM

8

-SM

8

N 581,340 E 2,326,070

Hole No. 18

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1	
		Sout Atlantic	St. Stephen, S.C.	OF 9 SHEETS	
1 PROJECT Cooper River Rediversion			10 SIZE AND TYPE OF BIT 1 3/8" I.D. Splitspoon &		
2 LOCATION (Coordinates or Station) Sta. 528+60 on CL			11 DATUM FOR ELEVATION MSL		
3 DRILLING AGENCY Savannah District			12 MANUFACTURER'S DESIGNATION OF DRILL Damco		
4 HOLE NO. (As shown on drawing title and file number) 18			13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 11		
5 NAME OF DRILLER T.W. Scott			14 TOTAL NUMBER CORE BOXES 13		
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG FROM VERT.			15 ELEVATION GROUND WATER 47.1' 21 Nov. 70		
7 THICKNESS OF OVERBURDEN 75.4'			16 DATE HOLE 19 Nov. 70		
8 DEPTH DRILLED INTO ROCK 126.6'			17 ELEVATION TOP OF HOLE +51.6		
9 TOTAL DEPTH OF HOLE 202.0'			18 TOTAL CORE RECOVERY FOR HOLE 75		
			19 SIGNATURE OF INSPECTOR G.J. Kravak		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	BOX OR SAMPLE NO.	REMARKS
+51.6	0.0		M-Black silty organic fine sand	1	W.T. 3.0'
			SC-Gray clayey fine sand	2	Date 20 Nov. 70
				3	Depth to water during drilling.
			SM-Tan silty fine sand	4	
	10			5	W.T. 3.1'
			Gray silty clay thin layers in tan silty fine sand	6	Water table reading 12 hrs. after hole completed.
	20			7	Water Content %
			SM-Gray silty fine sand	8	
	30		Dark gray silty clay thin layers in gray silty fine sand	9	
			SM-Silty very fine sand	10	
	40		SC - Dark gray silty clay thin layers in gray silty fine sand	11	
				12	
	50		SM-Greenish gray silty fine sand	13	
			Continued on Sheet #2	14	
	60		Soils field classified in accordance with the Unified Soil Classification System.	15	

LAB CLASSIFICATION	ELEV.	CLASS
1.8-3.6	SP	

GLOWS PER FOOT:
Number required to drive 1 3/8" ID splitspoon with 140 lb. hammer falling 30".

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +51.6		Hole No. 18		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 2 OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-8.4	60.0		SM-Gray silty very fine sand			100/0.3'
					100/0.5'	
					100/0.7'	
					100/0.8'	
					100/0.6'	
	70					94
						100
						100/0.8'
						100/0.6'
-23.8						85
						100/0.2'
			Shale, black, fine grained sandy, calcareous clay shale fossiliferous, fissility not well developed, indurated.			Fishtail refusal 75.4'
	80					NOTE: Scale change at 80.0'
				94		Pull #1 75.4' to 82.4'
				RQD-90		Run 7.0', Rec. 6.6', CLO. 4'
	82				1	
	84					
	86					
	88					
				98		Pull #2 82.4' to 94.4'
				RQD-90		Run 12.0', Rec. 11.8', CLO. 2'
					2	
	90					
-40.0			91.6' Horizontal Contact		3	
			Limestone, gray, fossiliferous			
	92		Continued on Sheet #3			

10

34

DRILLING LOG (Cont Sheet)

VATION TOP OF HOLE
+51.6

Hole No. 18

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 3

OF 9 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
+40.4	92.6	c	d			
			Limestone, gray, fossiliferous much coarse shell fragments in finer limey matrix, well indurated.			Pull #2 Continued
	94				3	
	96					
	98			100 RQD-98		Pull #3 94.4' to 102.4' Run 8.0', Rec. 8.5', CGO.5'
	100					
	102		102.4' to 105.1' Slightly indurated		4	
	104			100 RQD-44		Pull #4 102.4' to 105.1' Run 2.7', Rec. 2.7'
	106		105.1' to 105.9' well indurated			
-54.3	106		105.9' Low Angle Contact			Pull #5 105.1' to 112.5' Run 7.4' Rec 3.8' CL 3.6'
-55.9	108		SM-Gray silty fine sand		5	
			Continued on Sheet #4			

11

DRILLING LOG (Cont Sheet)

VATION TOP OF HOLE
+51.6

Hole No. 18

PROJECT

Cooper River Rediversion

INSTALLATION




St. Stephen, S.C.

SHEET 4

OF 9 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-56.4	108	c	d	e	f	g
	110		5M- Gray silty fine sand	51 RQD-24		Pull #5 Continued
	112					
	114				5	
	116			59 RQD-30		Pull #6 112.5' to 122.5' Run 10.0', Rec. 5.9', CL 4.1'
	118					
-67.3			18.9' Low Angle Contact			
	120		Limestone, gray, fossiliferous much coarse shell fragments in finer limey matrix, well indurated			
	122		122.0' to 122.5' Dense			
			122.5' to 128.4' Unindurated		6	Pull #7 122.5' to 130.0' Run 7.5', Rec 3.8' CL 3.7'
	124		Continued on Sheet #5			




12

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +51.6		Hole No. 18		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 5 OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-7214	124	c	d			
			Limestone, gray, fossiliferous much coarse shell fragments in finer limey matrix unindurated.			Pull #7 Continued
	126				51 RQD-17	
	128			128.4' to 130.0' Well indurated		6
	130		130.0' to 139.0' Slightly indurated			
	132					
	134			44 RQD-16	Pull #8 130.0' to 137.5' Run 7.5', Rec. 3.3', CL 4.2'	
	136				7	
	138				Pull #9 137.5' to 147.5' Run 10.0' Rec 2.4' CL 7.6'	
	140			139.0' to 139.7' Well indurated		
			Continued on Sheet #6			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +51.6		Hole No. 18		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 6 OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-88.4	140	c	SM- Dark gray silty fine sand, calcareous			Pull #9 Continued
	142					
	144			24 RQD-0		
	146					
	148				7	
	150					
	152			36 RQD-0		Pull #10 147.5' to 157.5' Run 10.0', Rec. 3.6', CL 6.4'
	154					
	156					

Continued on Sheet #7

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DRILLING LOG (Cont Sheet,		LOCATION TOP OF HOLE +51.6		Hole No. 18		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 7 OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, depth of weathering, etc. if significant)
-104.4	156		SM- Dark gray silty fine sand		7	Pull #10 Continued
			Sandstone, dark gray, fine grained, slightly indurated			
-105.9			157.5' Low Angle Contact			
	158		Shale, black, very fine grained fissility not well developed slightly indurated			
	160			62 RQD- 40		Pull #11 157.5' to 162.5' Run 5.0', Rec. 3.1', CG 1.9'
	162				8	
	164					
-114.3	166		165.9' Low Angle Contact Sandstone, gray, fine grained well indurated	100 RQD-86		Pull #12 162.5' to 171.2' Run 8.7', Rec. 9.4', CG 0.7'
			166.2' Low Angle Contact Shale, black, fine sandy fissility not well developed slightly indurated			
	168					
-117.0			168.6' Contact Sandstone, gray well indurated		9	
			Shale, black, very fine grained sandy clay shale, fissility not well developed, unindurated			
	170					
-119.6			Low Angle Contact 171.2'			
	172		Limestone, dark gray, fossiliferous much coarse shell fragments in finer limey matrix, slightly indurated			Pull #13 171.2' to 181.4' Run 10.2' Rec 10.7' CG 0.5'
			Continued on Sheet #8			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +51.6		Hole No. 18	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 8 OF 9 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-120.4	172	c	d Limestone, dark gray, fossiliferous much coarse shell fragments in finer limey matrix, slightly indurated.			Pull #13 Continued
-122.4	174		174.0' Low Angle Contact			
	176		Shale, black, very fine grained fissility not well developed slightly indurated.	100 RQD-32	10	
	178					
	180					
	182					
-131.2			182.8' 10° Contact			
			Limestone, gray, fossiliferous dense, well indurated		11	
	184		183.5' Low Angle Contact			
			Shale, black, fine grained, fine sandy clay shale with shell fragments, slightly indurated.	72 RQD-56		Pull #14 181.4' to 191.3' Run 9.9', Rec. 7.2', CL 2.7'
	186		185.7' to 188.9' Unindurated			
	188		Continued on Sheet #9			

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+51.6

Hole No. 18

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 9

OF 9 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-136.4	188		Shale, black, fine grained			
-137.3			fine sandy clay shale with shell fragments, unindurated		11	Pull #14 Continued
			188.9' Low Angle Contact			
	190		Limestone, gray, fossiliferous dense, well indurated			
			190.4' to 191.3' Slightly indurated			
-139.8			191.4' Low Angle Contact			
	192		Shale, black, very fine grained sandy clay shale, with shell fragments, fissility not well developed, slightly indurated		12	
	194					
-143.3			194.9' Low Angle Contact			
			Limestone, gray, fossiliferous dense, well indurated			
-144.8	196		196.4' Low Angle Contact	100		Pull #15, 191.3' to 202.0'
			Shale, black, very fine grained sandy clay shale, unindurated	ROD-70		Run 10.7', Rec. 10.9', CGO.2'
	198					
	200				13	
-150.2			Limestone, gray, fossiliferous well indurated			
-150.4	202		Bottom of Hole 202.0'			

N 582,575 E 2,326,770

Hole No. 24

DRILLING LOG		DIVISION South, Antic		INSTALLATION St. Stephen		SHEET 1 OF 9 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" I.D. Splitspoon & 4x5 1/2 Core BBI			
2. LOCATION (Coordinates or Station) Sta. 605+94, CL				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL Damco			
4. HOLE NO. (As shown on drawing title and file number) 24				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 10		UNDISTURBED 0	
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES 12		15. ELEVATION GROUND WATER 13.3' 3 Feb. 71	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE STARTED 1 Feb. 71		COMPLETED 4 Feb. 71	
7. THICKNESS OF OVERBURDEN 17.8				17. ELEVATION TOP OF HOLE 56.8'			
8. DEPTH DRILLED INTO ROCK 157.6				18. TOTAL CORE RECOVERY FOR BORING 53 %			
9. TOTAL DEPTH OF HOLE 175.4				19. SIGNATURE OF INSPECTOR Earl F. Titcomb, Geologist			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			SM- Coarse silty sand, brown		1	*WC % 8.5
			SC- Coarse clayey silty sand, mottled orange & brown, very high sand content 80%+. Minor small gravel 15.0' becomes very clayey, clay in thin layers of gray CL		2	*WC % 17.4
					3	*WC % 13.5
			Refusal to fishtail 17.8'		4	Scale change at 20.0'
			Sandstone, red, moderately indurated			Pull #1 17.8' to 21.7' Run 3.9' Rec. 1.6', CL 3.2'
			Shale, medium to dark gray with interbedded sand and sandstone layers. Slightly to moderately indurated. Sand- stone layers are irregular in shape and thickness 18.2' to 18.8' badly broken 18.9, 19.0 low angle breaks, thin sand zone.	41 RQD-0		
			19.0' to 21.7' core loss 22.0', 22.2' breaks 22.2' to 22.6' badly broken 22.6', 23.0', 23.4', 23.7', 23.9' low angle breaks.	100.0 RQD-33		Pull #2 21.7' to 24.0' Run 2.3', Rec. 2.3', CL 0.0'
			24.0' to 29.3' 4 low angle breaks, badly broken zone top of run. Core loss may have occurred along any of these breaks.		1	Pull #3 24.0' to 29.3' Run 5.3', Rec. 1.9', CL 3.4'
			Continued on Sheet #2--			
			Soils field classified in accordance with the Unified Soil Classification System.			
			*W.C. % Indicates water content %			

BLOWS PER FOOT: 18

Number required to drive
1 3/8" ID splitspoon
with 140 lb. hammer falling
30"

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE		Hole No. 24	
Cooper River Rediversion			56.8		SHEET 2 OF 9 SHEETS	
INSTALLATION			St. Stephen, S.C.		REMARKS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth, weathering, etc., if pertinent)
			Shale with interbedded sand and sandstone, shale is black, sand and sandstone medium gray. Shale contains black organic material. Slight to moderately indurated. Erratic penetration rate indicates core losses are occurring in soft sand layers. No reaction HCl. 4 breaks 29.3' to 31.7' 13 breaks 31.7' to 36.7'			Pull #3 continued
30				54 RQD-36		Pull #4 29.3' to 31.7' Run 2.4', Rec. 1.3', CL 1.1'
32						
34				72 RQD-40	2	Pull #5 31.7' to 36.7' Run 5.0', Rec. 3.7', CL 1.4'
36			8 breaks 36.7' to 41.7' Low angle parallel bedding.			
38			38.5' to 39.0' fossil rich layer soft			
40				70 RQD-30		Pull #6 36.7' to 41.7' Run 5.0', Rec. 3.5', CL 1.5'
42			8 breaks 41.7' to 45.6' most parallel bedding, badly broken zone top of run.			
44				46 RQD-0		Pull #7 41.7' to 45.6' Run 3.9', Rec. 1.8', CL 2.1'
-----Continued on Sheet #3-----						

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET 3		
Cooper River Rediversion		St. Stephen, S.C.		OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
						Pull #7 Continued
	46		Shale, black, with interbedded light to medium gray quartz sand. Most recovered material is shale. Slightly indurated. 13 breaks 45.6' to 51.7'	61 RQD-7		Pull #8 45.6' to 51.7' Run 6.1', Rec. 3.7', CL 2.4'
	48					
	50					NOTE: Scale change @ 50.0'
				12 RQD-0		Pull #9 51.7' to 56.7' Run 5.0', Rec. 0.6', CL 4.4'
			SM- Light gray, fine to medium grained, with minor thin lenses of dark gray CL.	0	5	Pull #10 56.7' to 61.7' Run 5.0', Rec. 0.0', CL 5.0'
	60				6	100/0.6'
					7	50/0.4'
	70				8	100/0.8'
					9	50/0.3'
	80				10	100/0.7'
					Box 4	
	90			30 RQD-8		Pull #11 82.4' to 91.4' Run 9.0', Rec. 2.7', CL 6.3'
-33.7			Sandstone, limey, fossiliferous much quartz sand, dark gray to black, mottled, well indurated			Scale change at 90.0'
				99 RQD-97		Pull #12 91.4' to 101.2' Run 9.8', Rec. 9.6', CL 0.2'
-35.2	92		Shale, black, few sandy areas, very few breaks, moderately indurated		5	
			2' horizon on sheet #1 to 51.7'.			

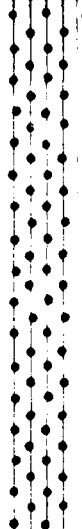

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 56.8		Hole No. 24		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 5 OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
		[Brick pattern]	110.7' Broken			Pull #13 Continued
			111.0' 3" diameter oyster shell			
110			111.0' to 114.5' 0.5' Limestone recovered. Contact is approximate based on approximate thickness of this limestone layer			
		[Brick pattern]		42		Pull #14, 111.0' to 116.9' Run 5.0', Rec. 2.1', CL 3.8'
112				RQD 25		
-57.7		[Dotted pattern]				Splitspoon Drive 100 Blows / 0.7'
			SM- Fine to medium sand, light to medium grav. with numerous black heavy minerals, limev. reacts HCl			
116						
		[Dotted pattern]				Pull #15 118.1' to 121.4' Run 3.3', Rec. 1.1', CL 2.2'
118						
				33 RQD 12	7	
-64.9		[Brick pattern]				Splitspoon Drive 100 Blows / 0.6'
122			Limestone, gray, fossiliferous, sandy. Soft to 122.5'			
			122.5' to 123.6' well indurated upper few tenths broken			
		[Brick pattern]	124.0' to 124.4' hard, badly broken	86 RQD 72		Pull #16 122.5' to 124.0' Run 1.5', Rec. 1.3', CL 0.2'
124						
-57.6						
						Pull #17 124.0' to 131.7' Run 6.7', Rec. 1.9', CL 4.8'

-----Continued on Sheet #6-----

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 56.8	Hole No. 24		
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 6 OF 9 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SM- Fine to medium grained, light to medium gray, soft.			Pull #17 Continued
	126			28 RQD 10		
	128					
	130				8	
	132			42 RQD 30		Pull #18 131.7' to 136.9' Run 5.2', Rec. 2.2', CL 3.0' Driller indicates lime- stone 133.7'
-76.9	134		Limestone, fossiliferous, sandy blue gray, generally well in- durated with zones of moder- ately indurated.			
	136		137.8' Moderately indurated zone, 0.1' thick, two breaks	30 RQD 12		Pull #19 136.9' to 146.7' Run 9.8', Rec. 3.0', CL 6.8'
	138		138.3' moderately indurated zone, 0.4' thick, breaks top and bottom			
-83.0	140				9	
-----Continued on Sheet #7-----						23

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		56.8		Hole No. 24	
PROJECT			INSTALLATION			SHEET 7	
Cooper River Rediversion			St. Stephen, S.C.			OF 9 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
			SM- Dark gray fossiliferous sand, impure. Large core loss this interval.			Pull #19 Continued	
142							
	144						
	146				9		
-89.9			Limestone, fossil, gray, sandy degree of induration varies, well indurated to soft, mostly moderately to soft. Large core losses probably represent soft areas. 0.9' well indurated material recovered this interval	44 RQD 27		Pull #20 146.7' to 155.4' Run 8.7', Rec. 3.8', CL 4.9'	
	148						
	150						
	152						
	154		155.4' to 156.1' well indurated				
-99.3	156		Core Loss			Pull #21 155.4' to 165.4' Run 10.0', Rec 6.6' CL 3.4	
-----Continued on Sheet #8-----							

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	Hole No.		
PROJECT			INSTALLATION	SHEET		
Cooper River Rediversion			St. Stephen, S.C.	8		
			OF 9 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
a	b	c	d	e	f	g
			Core Loss			Pull #21 Continued
-102.6	158			66 RQD 25		
	160		Sandstone, medium gray, fine grained, clayey, slightly indurated to unindurated to 162.1', 161.6' vertical break 162.1' to 163.0' well indurated lenses, limestone layer 163.0' to 163.3' soft, two horizontal breaks. 163.3' to 164.5' very clayey slightly indurated. No natural breaks. Almost a shale. 164.5' to 165.4' slightly to unindurated		10	Lab Sample 160.5' to 161.3'
-108.5	162					
	164					
	166		Shale, dark gray to black, moderately indurated to 168.2' No natural breaks			Pull #22 165.4' to 175.4' Run 10.0' Rec 10.0'
	168		168.2' to 169.7' well indurated sandstone zone 169.7' to 171.9' becoming increasingly sandy and softer, slightly indurated	MC 25.9%	11	
	170		-----Continued on Sheet #9-----			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, S.C.		9		
OF 9 SHEETS						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
a	b	c	d	e	f	g
			Shale, dark gray to black, sandy slightly to unindurated, RQD	100		
			High angle break 172.9' to 173.3'	65		
	172					Drilling time, water loss, depth of weathering, etc. if significant
						12
			173.9' to 175.4' Broken probably removing from core barrel.			
	174					
-118.6						
	176		Bottom of Hole 175.4'			

DRILLING LOG		DIVISION		INSTALLATION		Hole No. 42	
		South Atlantic		St. Stephen, S.C.		SHEET 1 OF 3 SHEETS	
1 PROJECT Cooper River Rediversion				10 SIZE AND TYPE OF BIT Roller Rock Bit, 4x5 1/2"			
2 LOCATION (Coordinates or Station) STA 597+90 150' Left C				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) Core BBL			
3 DRILLING AGENCY Savannah District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing			
4 HOLE NO. (As shown on drawing title and file number) 42				13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 0			
5 NAME OF DRILLER Gallander				14 TOTAL NUMBER CORE BOXES 6			
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG FROM VERT.				15 ELEVATION GROUND WATER 52.3			
7 THICKNESS OF OVERBURDEN 82.8' ?				16 DATE HOLE 22 Feb. 1974 STARTED _____ COMPLETED 24 Feb. 1974			
8 DEPTH DRILLED INTO ROCK 38.8'				17 ELEVATION TOP OF HOLE 59.7			
9 TOTAL DEPTH OF HOLE 121.6'				18 TOTAL CORE RECOVERY FOR BORING 90 %			
				19 SIGNATURE OF INSPECTOR J.M. Keeton			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	0					Note: used fish from 0.0' to 23.0' Roller Rock bit from 23.0' to 85.3' Scale Change 80.0' W.T. 7.4' Water table reading 24 hrs. after hole completed.	
	80						
	82						
-73.1			Top of Rock 82.8' ?				
	84		Sandstone				
-75.6							
	86		Sandstone, Fine Quartz Soft to moderately hard Interbedded with Clay- Shale Dark Gray	83	Box 1	Pull 1 85.3' to 88.9' Run- 3.6' Rec- 3.0' CL- 0.6'	
	88						
	90		-----CONTINUED ON SHEET #2-----			77	Pull 2 88.9' to 96.0' Run- 7.1' Rec- 5.2' CL- 1.9'

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DRILLING LOG (Cont Sheet)		SECTION TOP OF HOLE		Hole No. 42		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		St. Stephen, S.C.		OF 3 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
a	b	c	d	e	f	g
	92		Sandstone			Pull 2, Continued
-32.7			Clay-Shale, Dark Gray Interbedded with Sandstone Lenses, Fine Sand Slightly micaceous, soft		Box 2	
-34.3	94					
-34.7			Sandstone Quartz- Convolute Bedding Fine, Moderately hard Slightly Calcareous			
	96					
			Clay-Shale Soft Dark Gray Conchoidal Fracture	94	97.5 U-1 98.3	Pull 3 96.0' to 102.7' Run- 6.3' Rec- 0.4' Cl- 0.4'
-40.1					2	
-40.2	100		Glauconitic Zone, Moder- ately hard, Calcareous		Box 3	
			Limestone "Coquina" Soft to Moderately hard		U-2 101.3	
	102		99.9' to 102.2', Veins of Glauconitic clay present as a matrix for fragmental Limestone.	111.1	3 102.5	
			104.0' to 105.0' Broken-up Due to removal from core barrel, also a mud loss because of a hole in the core barrel. The core barrel was replaced.		U-3 103.7	Pull 4 102.7' to 102.9' Run- 0.2', Rec- 2.2' Cl- 2.0'
	104			117	3	Pull 5 102.9' to 105.3' Run- 2.4', Rec- 2.8'
			109' to 110.1' Broken-up Probably due to sand and gravel from overburden grinding away core, as we are not using casing.	100	U-4 106.4	Pull 6 105.3' to 106.9' Run- 1.6' Rec- 1.6'
	106				4	Pull 7 106.9' to 110.0' Run- 3.1 Rec- 3.0' Cl- 0.1'
	108		CONTINUED ON SHEET #3			

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DRILLING LOG (Cont Sheet)			ELEV IN TOP OF HOLE		Hole No.	
PROJECT			INSTALLATION		SHEET	
Cooper River Rediversion			St. Stephen, S.C.		42	
					3 OF 3 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	108					Pull 7, Continued
	110		Limestone "Coquina" Soft to Moderately hard	100	Box 5	Pull 8 11.0' to 113.1' Run- 3.1' Rec- 3.1'
	112					
	114			125		Pull 9 113.1' to 113.5' Run- 0.4', Rec- 0.5' CI- 0.1'
-55.6						
	116		Sand, very soft Fine, Greenish Gray Quartz, Calcareous	87		Pull 10 113.5' to 116.6' Run- 3.1' Rec- 2.7' CI- 0.4'
-56.8						
-57.2				125		Pull 11 116.6' to 117.0' Run- 0.4' Rec- 0.5'
-57.3			Limestone Moderately Hard		Box 6	
-58.2	118		Sand very soft Fine Quartz			Pull 12 117.0' to 121.6' Run- 4.6' Rec- 1.8' CI- 2.8'
			Limestone Moderately hard	40		
	120					
			Sand very soft Fine Quartz			
-61.9			Bottom of hole 121.6'			

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Hole No. 43

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1	
		South Atlantic		St. Stephen, S.C.		OF 2 SHEETS	
1 PROJECT Cooper River Rediversion				10 SIZE AND TYPE OF BIT Roller Rock bit, 4x5 1/2"			
2 LOCATION (Coordinates or Station) STA 600+09 147' Right of				11 DATUM FOR ELEVATION SHOWN (FBM or MSL) CORE BBL			
3 DRILLING AGENCY Savannah District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) 43				13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 0			
5 NAME OF DRILLER Gallander				14 TOTAL NUMBER CORE BOXES 5			
6 DIRECTION OF HOLE X VERTICAL INC. NEG. DEG. FROM VER.				15 ELEVATION GROUND WATER 44.9			
7 THICKNESS OF OVERBURDEN 72.4'				16 DATE HOLE STARTED 26 Feb. 1974 COMPLETED 28 Feb. 1974			
8 DEPTH DRILLED INTO ROCK 33.7'				17 ELEVATION TOP OF HOLE 46.5			
9 TOTAL DEPTH OF HOLE 106.1'				18 TOTAL CORE RECOVERY FOR BORING 99 %			
				19 SIGNATURE OF INSPECTOR J.M. Keeton			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	70					Note: Used fish tail bit from 0.0' to 5.0' used Roller Rock bit from 5.0' to 72.4'	
	72		Top of Rock 72.4'			Scale Change 70.0'	
-25.9	72		Sandstone, Fine Quartz Angular to Sub-rounded Moderately hard - cemented	90	Box 1	Pull 1 72.4' to 77.4'	
-27.1			Calcareous, Fossiliferous			Run- 5.0'	
-27.3	74		Convolute Bedding			Rec- 4.3'	
			Core Loss			CLO 0.7'	
-28.5			Clay-Shale, very sand, Interbedded with sand, Quartz				
	76		Soft - Fine sand Slightly Calcareous, Dark Gray-Noncemented				
-30.3			Sandstone, Fine Quartz				
-31.1			Noncemented, soft, Inter- bedded with Clay-Shale				
	78		Dark Gray, Convolute Bedding, (76.4' to 76.5' cemented) (77.3' to 77.6' Core Loss) (77.6' to 78.1' Cemented)	62		Pull 2 77.4' to 81.6'	
						Run- 4.2'	
						Rec- 2.5'	
						CLO 1.7'	
	90		CONTINUED ON SHEET #2		2		

30

DRILLING LOG (Cont Sheet)			TION TOP OF HOLE		Hole No. 43	
PROJECT Coope River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 2 OF 3 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY c	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
33.8	80		Clay-Shale, Interbedded with Sand, soft, Calcareous Dark Gray			Pull 2, Continued
35.3 35.6	82		Sandstone, Fine Quartz Sand, Cemented, Moderately hard, Convolute Bedding	384	2	Pull 3 81.6' to 82.3' Run- 0.7', Rec-2.7' C4- 2.0'
	84		Clay-Shale Soft Dark Gray Conchoidal Fracture	0	84.15 U-1 85.25	Pull 4 82.3' to 87.1' Run- 4.8' Rec- 0.0' C1- 4.8'
	86				2	
-41.2 41.2	38		Glaucanitic zone Calcareous, Moderately hard	99	Box 3 87.7 U-2 88.8	Pull 5 87.1' to 90.4' Run- 3.3' Rec- 3.2' C1- 0.1'
	30		Limestone "Coquina" Soft to Moderately hard		3	
	92		Soft zones 89.4'- 89.9', 90.7'-90.8', 93.4'- 93.8' These zones are character- ized by fragmental Lime- stone with Glaucanitic Clay seams; much like a soft Breccia, with Clay as a Matrix, giving a reworked appearance. The Clay in this Matrix is very soft, but the Lime- stone is soft to Moderately hard.	104	91.6 U-3 92.9 3	Pull 6 90.4' to 93.3' Run- 2.9' Rec- 3.0' Cg- 0.1'
	94			97	Box 4	Pull 7 93.3' to 96.7' Run- 3.4' Rec- 3.3' C1- 0.1'
	96	CONTINUED ON SHEET #3				

31

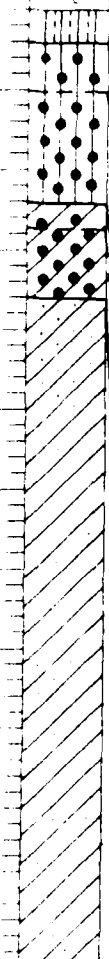
31

DRILLING LOG (Cont Sheet)		ION TOP OF HOLE		46.5		Hole No.		43	
PROJECT		INSTALLATION		St. Stephen, S. C.		SHEET 3		SHEETS	
Cooper River Rediversion									
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc., if significant)			
4	96	c	d			Pull 7, Continued			
	98		Limestone "Coquina" Soft to Moderately Hard	100	4	Pull 8 96.7' to 99.9' Run- 3.2' Rec- 3.2'			
	100				4	Pull 9 99.9' to 103.8' Run- 2.9' Rec- 2.9'			
	102				4				
-56.4			Sand Noncemented Fine Quartz Sand Sub-Angular to Sub-Rounded very soft Slightly Glauconitic Calcareous Greenish Gray Bottom of hole 106.1'	100	5	Pull 10 102.8' to 106.1' Run- 3.3' Rec- 3.3'			
	104								
-59.6	106								

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DRILLING LOG		DIVISION	INSTALLATION	Hole No. 44	SHEET 1 OF 5 SHEETS
1 PROJECT Cooper River Rediversion			10 SIZE AND TYPE OF BIT 3/8" ID Splitspoon W 4		512
2 LOCATION (Coordinates or Station) See Plan			11 DATUM FOR ELEVATION SHOWN MSL or MSL CORE BBL		
3 DRILLING AGENCY Savannah District			12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4 HOLE NO. (As shown on drawing title and file number) 44			13 TOTAL NO. OF OVER BURDEN SAMPLES TAKEN 29		
5 NAME OF DRILLER Gallander			14 TOTAL NUMBER CORE BOXES 6		
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.			15 ELEVATION GROUND WATER		
7 THICKNESS OF OVERBURDEN 74.2'			16 DATE HOLE STARTED 1 March 1974 6 March 1974		
8 DEPTH DRILLED INTO ROCK 38.5'			17 ELEVATION TOP OF HOLE 47.4		
9 TOTAL DEPTH OF HOLE 112.7'			18 TOTAL CORE RECOVERY FOR BORING 96		
			19 SIGNATURE OF INSPECTOR J.M. Keeton		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
46.4			OL- Sandy Silt, Fine Sand Very Soft, Wet, Black		12	
44.9			SM- Silty Sand, Fine Quartz Sand, Angular to Sub-Angular Very Soft, Wet		22	
41.4			SM- Silty Sand, Fine to Coarse, Angular to Sub- Rounded, Saturated Very Soft, Poorly Sorted		14	Note: Continuous
41.1			SC- Clayey Sand, Fine to Medium Sand, Mottled, Orange and Gray, Moist, Soft		70	Samples were taken.
38.4			SC- Clayey Sand, Fine Quartz Sand, Angular, Moist, Soft		62	
	10		CL-SP- Laminated Sand and Clay Interbedded Fine Quartz, Angular to Sub- Rounded, Non-cemented Sand Very Soft Sand Low Plasticity, Gray Clay Soft		39	
			18.0' to 24.0' Thin Bedded		53	
			24.5' to 24.6' Cemented Sand		67	
	15				69	
					100+	
					100+	
					100+	
					100+	
					85	
					100+	
					100+	
					100+	
					Fish Tail	
	20		---Continued on sheet #2---		77	
			Note: Soils field classified in accordance with the Uni- fied Soil Classification System.			
						BLOWS PER FOOT Number required to drive 1 3/8" ID Splitspoon w/140 LB. hammer falling 30".

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DRILLING LOG (Cont Sheet)

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

Hole No.

44

SHEET

2

OF 5 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORR. BOX OR RECOVER SAMPLE TRY NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30		CL-SP		Blows
			Laminated Sand and Clay		54
			Interbedded		100+
			Fine Quartz, Angular to		100+
			Sub-Rounded Sand		100+
	35		Very Soft Sand		100+
			Low Plasticity, Gray, Soft		100+
			Clay		100+
			31.5' to 35.0' No Clay		100+
					100+
	40				100+
					75
					100+
					100+
	45				100+
					41
					100+
					67
-2.6	50				8
			SP- Sand		6
			Fine to Medium		12
			Angular to Sub-Angular		100+
			Slightly Glauconitic		100+
	55		Very Soft		69
			Saturated		100+
			Non-cemented		100+
			Greenish Gray		100+
			Very Dense		100+
			54.0' to 62.0' Fine Sand		100+
	60		Light Gray		100+
					100+
					100+
					100+
					100+
					100+
	65				100+
					100+
					100+
					100+
					100+
	70				100+

Continued on sheet #3

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DRILLING LOG (Cont Sheet)

TION TOP OF HOLE

47.4

Hole No. 44

PROJECT

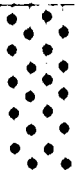
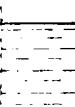

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 3

OF 5 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, depth of weathering, etc. if applicable)
	3		SP- Sand, Fine Angular to Sub-Angular Very Soft Saturated, Very Dense Non-cemented			Blows 100+ Scale Change at 70.0'
-24.6			SM- Silty Sand, Fine Calcareous, Low Plasticity Slightly Glauconitic Shell Fragments Green			100+
-26.8			Top of Rock 74.2'			100+ Top of Rock 74.2'
			Sandstone Fine Sand Angular to Sub-Rounded Argillaceous Glauconitic Slightly Calcareous Shell Fragments Greenish Gray	90	1	Pull 1 74.2' to 76.0' Run- 1.8' Rec- 1.6' CI- 0.2'
	3				98	Pull 2 76.0' to 80.3' Run- 4.3' Rec- 4.2' CI- 0.1'
	10				100	Pull 3 80.3' to 83.3' Run- 3.0' Rec- 3.0' CI- 0.0'
-35.4			Clay-Shale Slightly Micaceous, Soft Dark Gray Conchoidal Fracture Thin Fine Sand Lenses present Lenses Cemented, Calcareous		2	
-36.5			Sandstone			Pull 4
-36.8			Fine, Moderately Hard Argillaceous, Convolute Bedding Clay-Shale	52		83.3' to 87.0' Run- 3.7' Rec- 1.9' CI- 1.8'

-----Continued on sheet #4-----

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DRILLING LOG (Cont Sheet)

ION TOP OF HOLE

47

Hole No. 44

PROJECT

Cooper River Rediversion

INSTALLATION


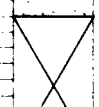
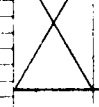
St. Stephen, S.C.

SHEET 4

OF 5 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	86					Pull 4, Continued
			Clay-Shale Slightly Micaceous Soft		3	
	88		Dark Gray Conchoidal Fracture Some Cemented Calcareous Sandstone Lenses	62	88.4	Pull 5 87.0' to 89.4' Run- 2.4' Rec- 1.5' CI- 0.9'
-42.2 -42.3	90		Glaucanitic Zone Moderately Hard, Calcareous Greenish Gray	250	89.6 U-2 90.4	Pull 6 89.4' to 91.4' Run- 2.0' Rec- 5.0' Cg- 3.0'
	92		Limestone, "Coquina" Soft to Moderately Hard Slightly Glaucanitic	95	3	Pull 7 91.4' to 95.0' Run- 3.6' Rec- 3.4' CI- 0.2'
	94		94.2' to 94.5' Clay Seam Glaucanitic		93.8 U-3 94.8	
	96			100	U-4 96.3	Pull 8 95.0' to 98.3' Run- 3.3' Rec- 3.3' CI- 0.0'
	98				4	
	100			98		Pull 9 98.3' to 101.8' Run- 3.5' Rec- 3.4' CI- 0.1'
	102		Continued on sheet #5			

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DRILLING LOG (Cont Sheet)			ION TOP OF HOLE 474'		Hole No. 44	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 5 OF 5 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	102		Limestone, "Coquina" Soft to Moderately Hard Slightly Glauconitic	108	5	Pull 10 101.8' to 104.9' Run- 3.1' Rec- 3.4' Cg- 0.5'
	104					
-58.5	106		Sandstone Fine Cemented Calcareous Moderately Hard Slightly Glauconitic Light Green	95		Pull 11 104.9' to 108.6' Run- 3.7' Rec- 3.5' C1- 0.2'
	108		107.4' to 111.0' Non-cemented Very Soft Slightly Silty Light Gray	66	6	Pull 12 108.6' to 112.7' Run- 4.1' Rec- 2.6' C1- 3.5'
	110					
-63.6						
-65.3	112		Bottom of hole 112.7'			

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Hole No. 45


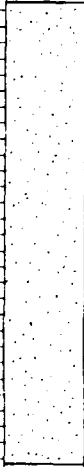

DRILLING LOG		DIVISION South Atlantic		INSTALLATION St. Stephen, S.C.		SHEET 1 OF 3 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT Roller Rock bit, 4x5 1/2"			
2. LOCATION (Coordinates or Station) STA 599+50 Offset 1700' LEFT				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314			
4. HOLE NO. (As shown on drawing title and file number) 45				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 0	
5. NAME OF DRILLER Gallander				14. TOTAL NUMBER CORE BOXES 5		UNDISTURBED	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER			
7. THICKNESS OF OVERBURDEN 77.3' ?				16. DATE HOLE		STARTED 7 March 74	
8. DEPTH DRILLED INTO ROCK 35.4'				17. ELEVATION TOP OF HOLE 51.7		COMPLETED 11 March 74	
9. TOTAL DEPTH OF HOLE 112.7'				18. TOTAL CORE RECOVERY FOR BORING 98 %		19. SIGNATURE OF INSPECTOR J.M. Keeton	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
-25.6	75					Note: Used Roller Rock bit from 0.0' to 77.3'	
	77		Top of Rock 77.3'			W.T. 0.0' Water table reading 24 hrs. after hole completed. Scale Change 75.0'	
	79		Sandstone, Fine Angular to Sub-Angular Quartz, Calcareous Soft to Moderately hard Argillaceous Slightly fossiliferous Dark Gray, Convolute Bedding Some Area are cemented	92	Box 1	Pull 1 77.3' to 81.3' Run- 4.7' Rec- 3.7' CI- 0.3'	
	81						
	83			98		Pull 2 81.3' to 85.9' Run- 4.6' Rec- 4.5' CI- 0.1'	
	85				Box 2	-----Continued on sheet #2	

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DRILLING LOG (Cont Sheet)			ION TOP OF HOLE		Hole No. 45	
PROJECT			INSTALLATION		SHEET 2 OF 3 SHEETS	
Cooper River Rediversion			St. Stephen, S.C.			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	85					Pull 2, Continued
-35.1 -35.5			Clay-Shale, Soft to Dark Gray, Conchoidal Fracture Thin Sandstone lenses present. These lenses are fine cemented, Calcareous, Moderately hard, Quartz Sand	27	2	Pull 3 85.9' to 89.7' Run- 3.8' Rec- 1.0' Cl- 2.8'
	89		Sandstone, Fine Quartz Sand Cemented, Calcareous, Moderately hard, Convolute Bedding, Argillaceous			
	91		Clay-Shale, soft, Dark Gray, Conchoidal Fracture Thin Sandstone lenses present. These lenses are fine cemented, Calcareous, Moderately hard, Quartz Sand	137		Pull 4 89.7' to 90.8' Run- 1.1' Rec- 1.5' Cg- 0.4'
-40.1				47	92.3	Pull 5 90.8' to 93.1' Run- 2.3' Rec- 1.1', Cl- 1.2'
	93		Glaucinitic Zone Moderately hard Calcareous	0	U-1	Pull 6 93.1' to 93.9' Run- 0.8' Rec- 0.0' Cl- 0.8'
	95		Limestone "Coquina" Soft to moderately hard Slightly Glaucinitic	1250	93.9	Pull 7 93.9' to 94.3' Run- 0.4' Rec- 4.9', Cg- 4.5'
	97			94	3	Pull 8 94.3' to 97.4' Run- 3.1' Rec- 2.9', Cl- 0.2'
	99				97.2	Pull 9 97.4' to 100.9' Run- 3.5' Rec- 3.8' Cg- 0.3'
				108	U-2 98.4	
					4	
-----Continued on sheet #3-----						

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DRILLING LOG (Cont Sheet)		ION TOP OF HOLE		51.7		Hole No.		45			
PROJECT			Cooper River Rediversion			INSTALLATION			St. Stephen, S.C.		
SHEET 3			OF 3 SHEETS								
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)					
a	10P	c	d	e	t	R					
	103		Limestone, "Coquina" Soft to Moderately hard Slightly Glauconitic	100		Pull 10 100.9' to 104.1' Run- 3.2' Rec- 3.2'					
	105			90	5	Pull 11 104.1' to 107.2' Run- 3.1' Rec- 2.8' Cl- 0.3'					
-55.2	107		Sand Fine, Noncemented, Quartz Very soft Slightly Glauconitic Calcareous Light Green	90		Pull 12 107.2' to 110.5' Run- 3.3' Rec- 2.9' Cl- 0.4'					
	109										
	111			96		Pull 13 11-.5' to 112.7' Run- 2.2' Rec- 2.1' Cl- 0.1'					
-61.0			Bottom of hole 112.7'								

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Hole No. 46

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		St. Stephen, South Carolina		OF 8 SHEETS	
1 PROJECT Copper River Rediversion				10 SIZE AND TYPE OF BIT 1 3/8" 1D Splitspoon &			
2 LOCATION (Coordinates or Station) STA 598+60 160' Left C				11 DATUM FOR ELEVATION SHOWN (Term or MSL) 4x5 1/2" Core BL			
3 DRILLING AGENCY Savannah District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) 46				13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 37			
5 NAME OF DRILLER Gallander				14 TOTAL NUMBER CORE BOXES 11			
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER			
7 THICKNESS OF OVERBURDEN 80.0				16 DATE HOLE 12 March 74 20 March 74			
8 DEPTH DRILLED INTO ROCK 81.1				17 ELEVATION TOP OF HOLE +55.0'			
9 TOTAL DEPTH OF HOLE 161.1				18 TOTAL CORE RECOVERY FOR BORING 87			
				19 SIGNATURE OF INSPECTOR J. M. Keeton			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
+59.0	b	c	d	e	f	Blows g	
+54.5			OL-Sandy Silt Fine sand, very soft Moist, non-cemented Black			16	
						15	
+50.2			SM-Silty Sand Fine quartz Angular to sub-angular Very Soft Non-cemented, moist 3.6' to 4.8' orange			32	
+49.7						60	
						42	
						27	
+44.5			SC-Clayey Sand Fine to coarse sand Angular to sub-angular Non-cemented Stiff, low plasticity Gray			24	
						48	
						27	
						22	
+37.7			SM-Silty Sand Fine to coarse sand Angular to sub-angular Moist, soft Quartz sand Non-cemented, Mottled; orange & yellow			100+	
						41	
						71	
			SP-CL-Alternating layers of fine sand and clay, Laminated, Mottled; gray & tan Soft, low plasticity clay Sub-angular to sub-rounded Sand, Moist.			53	
						45	
						74	
						100+	
+25.0			SP-CH- Alternating layers of fine quartz sand & clay Laminated, Gray.			100+	

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DRILLING LOG (Cont Sheet)			ELEVATION ON TOP OF HOLE		Hole No. 46	
PROJECT			55.0		SHEET 3	
Cooper River Rediversion			St. Stephen, S.C.		OF 8 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	70					Blows 100+
			SP- Sand Fine Quartz Sand Angular to Sub-Angular Slightly Glauconitic Non-cemented, Very Soft Wet Light Green			100+ 100+ 100+ 100+ 76
-22						85 Note: Scale Change at 80.0'
-25	30		SM- Silty Sand, Fine to Medium Sand, Quartz Sand Calcareous, Non-cemented Broken Shell Fragments Moist			100+ Fish Tailed
-25.3				0	1	Pull 1 80.2' to 81.0' Run- 0.4' Rec- 0.0', CI- 0.4'
			Sandstone, Argillaceous Fine Quartz Sand Angular to Sub-Angular Slightly Glauconitic Dark Gray 80.3' to 81.8' Cemented Moderately Hard 81.8' to 88.0' Non-cemented Soft	91 183		Pull 2 80.6' to 82.0' Run- 2.3' Rec- 2.1', CI- 0.4'
	32					Pull 3 82.9' to 83.5' Run- 0.6' Rec- 1.1', Cg- 0.5'
	84					Pull 4 83.5' to 87.3' Run- 3.8' Rec- 2.3' CI- 1.5'
	36		Gradational		87.0	
			Clay-Shale, Fine Sand lenses present, Dark Gray Soft, Conchoidal Fracture Some of the Sand Lenses are Cemented.		U-1 88.0 2	Pull 5 87.3' to 89.8' Run- 2.5' Rec- 2.5' CI- 0.0'
-33	88			100		Pull 6 Rec- 1.0' 89.8' to 89.8'
-34.4			Sandstone, Fine Quartz Sand, Moderately hard Cemented, Calcareous Load Casts present at bottom.			Pull 7 89.8' to 93.8' Run- 4.0' Rec- 2.1' CI- 1.9'
-34.7	90		Clay-Shale, soft, Dark Gray Conchoidal Fracture	50		
	92		Continued on sheet #4			

DRILLING LOG (Cont Sheet)

ION TOP OF HOLE

55.0

Hole No. 46

PROJECT

INSTALLATION

SHEET 4

OF 8 SHEETS

Cooper River Rediversion

St. Stephen, S.C.


ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	92		Clay-Shale Soft Dark Gray Conchoidal Fracture		2	Pull 7, Continued
	94			200	94.7	Pull 8 93.8' to 96.1' Run- 2.3' Rec- 4.6' Cg- 2.3'
-40.1 -40.3			Glaucanitic Zone Moderately Hard Calcareous, Cemented		U-2 96.1	
	96					
			Limestone, "Coquina" Soft to Moderately hard Slightly Glaucanitic 95.3' to 96.3' has a reworked appearance with soft fine Glaucanitic Quartz Sand Veins.		98.3 U-3 99.3	Pull 9 96.1' to 99.4' Run- 3.3' Rec- 2.2' Cl- 1.1'
	98					
	100			157		Pull 10 99.4' to 101.5' Run- 2.1' Rec- 3.3' Cg- 1.2'
	102				4	Pull 11 101.5' to 105.0' Run- 3.5' Rec- 3.4' Cl- 0.1'
	104			97		
	106			100		Pull 12 105.0' to 108.4' Run- 3.4' Rec- 3.4' Cl- 0.0'
					5	
	108		Continued on sheet #5			

44

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 55.0		Hole No. 46	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 5 OF 8 SHEETS	
ELEVATION a	DEPTH 108	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Limestone, "Coquina" Soft to Moderately Hard Slightly Glauconitic	13		Pull 13 108.4' to 109.0' Run- 3.0' Rec- 0.4', C1-0.2'
-55.6	110					
			Sand Fine to Medium Quartz Sand Angular to Sub-Angular Non-cemented, Very Soft Calcareous	93		Pull 14 109.0' to 112.0' Run- 3.0' Rec- 2.8' C1- 0.2'
	112					
	114			114	6	Pull 15 112.0' to 115.4' Run- 3.4' Rec- 3.9' Cg- 0.5'
	116			86		Pull 16 115.4' to 119.0' Run- 3.6' Rec- 3.1' C1- 0.5'
-62.1						
	118		Limestone, "Coquina" Moderately Hard 119.9' to 120.1' 120.4' to 120.5' 121.4' to 121.5' Very Soft Zones, Silty, Calcareous, Quartz, Fine Sand			
	120					Pull 17 119.0' to 122.9' Run- 3.9' Rec- 4.0' Cg- 0.1'
			Sand, Fine to Medium Quartz Sand, Silty, Numerous shell Fragments, Very Soft Non-cemented	102	7	
-66.8	122					
			Limestone, "Coquina" Alternating zones of very soft Non-cemented, Sandy Fossiliferous "Mash" and Cemented, Moderately Hard	68		Pull 18 122.9' to 125.4' Run- 2.5' Rec- 1.7', C1- 0.8
-68.2						
			-----Continued on sheet #6-----			

45

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 46		
PROJECT		INSTALLATION		SHEET 6 OF 8 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	124	c	d	e	f	g
			Limestone, "Coquina" Alternating Zones of very soft Non-cemented and Cemented, Moderately Hard Very Sandy, Fossiliferous "Hash"			Pull 18, Continued
	126			26		Pull 19 125.4' to 127.3' Run- 1.9' Rec- 0.5', 1.4'
	128			33		Pull 20 127.3' to 128.2' Run- 0.9' Rec- 0.3'
	130			33	8	Pull 21 128.2' to 129.9' Run- 1.7' Rec- 1.7' CI- 0.0'
	132			75		Pull 22 129.9' to 131.5' Run- 1.6' Rec- 1.5', CI- 0.1'
	134			43		Pull 23 131.5' to 132.3' Run- 0.8' Rec- 0.6', CI- 0.2'
	136			21		Pull 24 132.3' to 137.8' Run- 3.0' Rec- 1.3', CI- 1.7'
	138					Pull 25 135.3' to 137.8' Run- 3.5' Rec- 1.1' CI- 2.4'
	140					Pull 26 137.8' to 141.3' Run- 3.5' Rec- 1.5' CI- 2.0'
-----Continued on sheet #7-----						46

DRILLING LOG (Cont Sheet)			TION TOP OF HOLE		55.0		Hole No. 46		
PROJECT			INSTALLATION		St. Stephen, S.C.		SHEET 7 OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)		% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS		
a	140	c	d		e	f	K		
			Limestone, "Coquina" Alternating Zones of very Soft Non-cemented and Cemented, Moderately Hard Very Sandy, Fossiliferous "Hash"				Pull 26, Continued		
	142				86	9	Pull 27 141.3' to 142.8' Run- 1.5' Rec- 1.3', CI- 0.3'		
					0		Pull 28 142.8' to 143.1' Run- 0.3' Rec- 0.0', CI- 0.3'		
	144				77		Pull 29 143.1' to 144.9' Run- 1.8' Rec- 1.4', CI- 0.4'		
	146				55		Pull 30 144.9' to 146.9' Run- 2.0' Rec- 1.1', CI- 0.1'		
-43.3	148		Silty Sand Fossiliferous-Pelecypods Fine to Medium Quartz Sand. Non-cemented Very Soft Calcareous Moist		121		Pull 31 146.9' to 150.1' Run- 3.2' Rec- 3.9' Cg- 0.7'		
150					10	Pull 32 150.1' to 153.4' Run- 3.3' Rec- 2.5' CI- 0.8'			
152					15				
154					91	Pull 33 153.4' to 157.1' Run- 3.7' Rec- 3.4' CI- 0.3'			
156	-----Continued on sheet #8-----								
47									

47

DRILLING LOG (Cont Sheet)		TION TOP OF HOLE		Hole No. 46		
PROJECT Cooper River Rediversion		INSTALLATION		St. Stephen, S.C.		
SHEET 8 OF 8 SHEETS						
ELEVATION a	DEPTH	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. of overburden) g
	156		Silty Sand, Fine to Medium Quartz Sand, Fossiliferous- Pelecypods, Non-cemented Calcareous, Very Soft, Moist Load Casts present at bottom of Layer.			Pull 33. Continued
-103.3	158		Clay-Shale Soft, Calcareous Dark Gray, 159.1' to 161.1' Fine Sand and Silt Lenses.	107	11	Pull 34 157.1' to 161.1' Pun- 4.0' Rec- 4.1' Cq- 0.1'
-106.1			Bottom of hole 161.1'			

48

DRILLING LOG		DIVISION		INSTALLATION		Hole No. 47	
		South Atlantic		St. Stephen, S.C.		SHEET 1 OF 3 SHEETS	
1 PROJECT Cooper River Rediversion				10 SIZE AND TYPE OF BIT Roller Rock bit, 4x5"			
2 LOCATION (Coordinates or Station) STA 598+00 165 ft. Right C				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Savannah District				12 MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4 HOLE NO. (As shown on drawing title and file number) 47				13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 0			
5 NAME OF DRILLER Scott				14 TOTAL NUMBER CORE BOXES 5			
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER 48.5'			
7 THICKNESS OF OVERBURDEN 76.0'				16 DATE HOLE STARTED 23 April 74 COMPLETED 25 April 74			
8 DEPTH DRILLED INTO ROCK 34.7'				17 ELEVATION TOP OF HOLE 49.0'			
9 TOTAL DEPTH OF HOLE 110.7'				18 TOTAL CORE RECOVERY FOR BORING 83 %			
				19 SIGNATURE OF INSPECTOR J.M. Keeton			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
70						Note: Used Roller Rock bit from 0.0' to 76.0'	
72						Scale Change 70.0'	
74						W.T. 0.5' 23 April 1974 Depth to water during drilling.	
-27.0' 76			Top of Rock 76.0'			W.T. 0.5' Water table reading 24 hrs. after hole completed.	
78			Sandstone, Fine to Medium Argillaceous Medium hard Dark Gray	100	1	P.L. 1 76.0' to 81.5' Run - 5.0' Rec - 5.0'	
80			-----Continued on sheet #2-----				

49

DRILLING LOG (Cont Sheet)

ION TOP OF HOLE

49.0

Hole No. 47

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 2

OF 2 SHEETS

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
(Description)

% CORE BOX OR
RECON SAMPLE
ERY NO
e f

REMARKS

Drilling time, water loss, depth of
weathering, etc. (if significant)

K

a

80 b

c

d

Sandstone
Fine to Medium, Argillaceous
Medium hard
Dark Gray

Pull 1, Continued

-33.4

82

Shale
Sandy
Dark Gray
Calcareous
Sand Interbedded

100

Pull 2
81.6' to 86.6'
Run- 5.0'
Rec- 5.0'

84

Note: Run #2, Core barrel
blocked, had to beat core
out of the barrel. Core
completely broken-up and
mixed. Pull #3 also came
out badly broken.

86

36

Pull 3
86.6' to 89.6'
Run- 3.0'
Rec- 1.1'
C1- 0.0'

88

90

100

Pull 4
89.6' to 92.6'
Run- 3.0'
Rec- 3.3'
Cg- 0.3'

-43.0

92

Limestone "Coquina"
Soft to Moderately hard
Slightly Glauconitic

84

Pull 5
92.6' to 93.7'
Run- 1.1'
Rec- 1.3'
Cg- 0.2'

94

100

Pull 6
93.7' to 97.0'
Run- 3.3'
Rec- 3.3'

96

Continued on sheet #3

50

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE		Hole No.	
PROJECT			INSTALLATION		SHEET	
Cooper River Rediversion			St. Stephen, S.C.		OF 3 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	96					Pull 6, Continued
	98		Limestone, "Coquina" Soft to Moderately hard Slightly Glauconitic	106	4	Pull 7 97.0' to 100.2' Run- 3.2' Rec- 3.4' Cg- 0.2'
	100			100		Pull 8 100.2' to 103.5' Run- 3.3' Rec- 3.3'
	102		103.5' to 104.0' Very Soft, Clayey			
	104			83	5	Pull 9 103.5' to 106.3' Run- 2.8' Rec- 2.3' C1- 0.5'
	106					
-58.0			Sand Slightly silty Soft, Calcareous Glauconitic Angular to Sub-Angular Quartz, Greenish Gray 107.7' to 108.1' Cemented, hard	95		Pull 10 106.3' to 110.7' Run- 4.4' Rec- 4.2' C1- 0.2'
	108					
	110		Bottom of hole 110.5'			
-61.5						

51

Hole No. 48

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 5 SHEETS	
1. PROJECT Cooper River Rediversion		South Atlantic		St. Stephen, S.C.			
2. LOCATION (Coordinates or Station) Sta. 597+75, Centerline				10. SIZE AND TYPE OF BIT 1 3/8" ID SS, 4x5 1/2" Core		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) BBL	
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314			
4. HOLE NO. (As shown on drawing title and file number) 48				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 30		UNDISTURBED 1	
5. NAME OF DRILLER Gallander				14. TOTAL NUMBER CORE BOXES 6			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER			
7. THICKNESS OF OVERBURDEN 78.5'				16. DATE HOLE 8 May 1974		STARTED 15 May 1974	
8. DEPTH DRILLED INTO ROCK 36.6'				17. ELEVATION TOP OF HOLE 53.5			
9. TOTAL DEPTH OF HOLE 115.1'				18. TOTAL CORE RECOVERY FOR BORING 98 %			
				19. SIGNATURE OF INSPECTOR J.M. Keeton			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
51.0			SM- Silty Sand, Fine Angular to Sub-Angular, Quartz Sand Soft, Non-cemented, Moist Dull Yellowish Brown			4	
	5		SC- Clayey Sand Slightly Clayey Fine to Coarse Sand, Quartz Sand Non-cemented, Angular to Sub-Angular, Light Gray, Medium Plasticity Non-cemented and Medium Stiff			12	Note: Continuous
45.5						34	Samples were taken.
43.5	10					73	
			SM- Silty Sand, Fine to Coarse, Quartz Sand Angular to Sub-Angular Soft, Non-cemented, Wet Light Gray, 9/10 Saturated			54	
37.5	15					80	
			SM-SC-CL- Interbedded Silty and Clayey Fine Sand and Silty Sand Clay, Laminated Mottled, Gray, Orange, Red Moist, Soft to Medium Stiff Low to Medium Plasticity Non-cemented			19	
	20					9	
			SP-CL, Fine Quartz Sand Interbedded with Lean Clay Laminated to thin Bedded Moist, Angular to Sub-Angular, Soft, Non-cemented Sand, Medium Plasticity, Soft Clay, Gray.			23	
	25					29	
						31	
	30					65	
						82	
						65	
						64	
						100+	
						100+	
						100+	
						87	
						100+	
			---Continued on sheet #2---				
			Note: Soils field classified in accordance with the Unified Soil Classification System.				
						52	
						BLOWS PER FOOT	
						Number required to drive	
						1 3/8" ID Splitspoon	
						w/140 lb. hammer fall 30"	
						30"	

DRILLING LOG (Cont Sheet)		ELEVATION	TOP OF HOLE	Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, S.C.		OF 5 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	30					Blows
			SP-CL, Fine to Quartz Sand Interbedded with Lean Clay Laminated to thin Bedded Moist, Angular to Sub-Angular Soft, Non-cemented Sand Medium Plasticity, Soft Clay Gray			100+
						100+
						100+
	35					100+
			36.0' to 38.0' Greenish Gray Fine to Medium Sand			20
15.5						
	40		SP- Sand Fine Angular to Sub-Angular Quartz Sand Moist, Soft to Non-cemented Gray Some Lean Clay Lenses			100+
						100+
						100+
	45					100+
						98
						36
						20
	50		49.5' to 53.5' Saturated			7
						3
						15
	55					26
						23
						10
						100+
	60					100+
						100+
						100+
	65					100+
						100+
						100+
						100+
						100+
	70					100+


Continued on sheet #3

53

DRILLING LOG (Cont Sheet)		ELEVATION	OP OF HOLE	53.5		Hole No. 48	
PROJECT			INSTALLATION		SHEET 3 OF 5 SHEETS		
Cooper River Rediversion			St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	Blows g	
-22.5	70		SP- Sand Fine Angular to Sub-Angular Quartz Sand Moist, Soft, Non-cemented Some CL lenses			100+	
	100+						
	75					100+	
	77		SM- Silty Sand Fine Angular to Sub-Angular Quartz Sand Calcareous, Soft, Non-cemented Moist, Shell Fragments Greenish Gray			100+	
	79						
-25.0	83		Sandstone Silty non-cemented soft sand Interbedded with soft non-cemented Clay-Shale This sand is in the form of lenses and numerous load casts. Dark Gray Calcareous Angular to Sub-Angular Fine to Medium Sand Some Shell Fragments Some Cemented Zones 85.4' to 85.9' Cemented Calcareous	64	1	Pull 1 78.5' to 82.9' Run- 4.1' Rec- 2.6' Cl- 1.5'	
	85						
-32.5	87		Gradational Clay-Shale, Sandy, Silt and Sand lenses present Soft, Non-cemented Dark Gray 88.0' to 88.3' Cemented Calcareous	137	2	Pull 2 82.9' to 86.6' Run- 3.7' Rec- 5.1' Cg- 1.4'	
	89						
						Pull 3 86.6' to 90.6' Run- 4.0' Rec- 2.4' Cl- 1.6'	
						-----Continued on sheet #4-----	
						54	

DRILLING LOG (Cont Sheet)			ELEVATION	DEPTH OF HOLE	Hole No.	
PROJECT			INSTALLATION		SHEET	
Cooper River Rediversion			St. Stephen, S.C.		48	
					OF 5 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	89		Clay-Shale Conchoidal Fracture Soft Dark Gray		2	Pull 3, Continued
	91			141	91.5	Pull 4 90.6' to 94.0'
					U-1	Run- 3.4'
					92.6	Rec- 4.8'
	93		93.7' to 93.8' Glauconitic Zone, Calcareous, Mod. Hard Cemented		3	Cg- 1.4'
-40.3	95		Limestone, "Coquina" Slightly Glauconitic Soft to Moderately Hard	102		Pull 5 94.0' to 97.4'
	97					Run- 3.4'
						Rec- 3.5'
						Cg- 0.1'
	99			100		Pull 6 97.4' to 101.2'
						Run- 3.8'
						Rec- 3.8'
					4	CI- 0.0'
	101					Pull 7 101.2' to 104.3'
				100		Run- 3.1'
	103					Rec- 3.1'
						CI- 0.0'
						Pull 8
	105		Continued on sheet #5			

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DRILLING LOG (Cont Sheet)		ELEVAT	OP OF HOLE	Hole No. 48		
PROJECT		INSTALLATION		SHEET OF 5 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-56.5	105		Limestone, "Coquina" Slightly Glauconitic Soft to Moderately Hard	100	5	Pull 8, Continued 104.3' to 107.5' Run- 3.2' Rec- 3.2' CI- 0.0'
	107			89		Pull 9 107.5' to 111.2' Run- 3.7' Rec- 3.3' CI- 0.4'
	109					
	111		100			
113						
-61.6	115		Sand, Fine, Slightly Silty Angular to Sub-Angular Quartz, Moist Slightly Glauconitic Soft, Non-cemented Calcareous, Greenish Gray 110.8' to 111.6' Cemented Moderately Hard 113.5' Becoming more Silty			
			Bottom of hole 115.1'			

56

DRILLING LOG (Cont Sheet)		ELEVATIC	JP OF HOLE	Hole No. 49		
PROJECT		INSTALLATION		SHEET 2 OF 3 SHEETS		
Cooper River Rediversion		ST. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-30.5	78 _b	c	d	e	f	g
			Cont. Sandstone, calcareous loosely cemented.			
	80		Well cemented zone, mod- erately hard arkose.	79	1	Pull 3 78.8'-82.3' Run 3.4' Rec 2.7' C.L. 0.7'
-32.3					2	
-32.5			Sandstone/ Clay shale gradational contact normal, soft.		81.5	
	82				U-1	
				131	82.7	
			Silty Clay Shale, soft, gray, blocky, calcareous with sandy lenses randomly layered with sandy 1/16 inch laminae 84.0'-88.4' Clay shale homogenous, choncoidal fracture.		1	Pull 4 82.3'-83.5' Run 1.3' Rec 1.7' C.G. 0.3'
	84				84.3	
				70	U-2	
					85.5	
	86				2	Pull 5 83.5'-88.2' Run 4.7' Rec 3.3' C.L. 0.7'
-39.9	88					
-40.1			Glaucinitic zone mod- erately hard, green calcareous	150	3	Pull 6 88.2'-91.4' Run 3.2' Rec 4.8' C.G. 1.6'
	90					
			Limestone, "Coquina". gray soft to moderately hard, glauconitic, sandy & pebbly seams.			
	92			97	92.1	Pull 7 91.4'-95.0' Run 3.6' Rec 3.5' C.L. 0.1'
					U-3	
					93.2	
					3	
	94		-----Cont on sheet #3-----			

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DRILLING LOG (Cont Sheet)		ELEVATION	TOP OF HOLE	Hole No. 49		
PROJECT		INSTALLATION		SHEET 3 OF 3 SHEETS		
Cooper River Rediversion		St. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-45.5	94		Cont. Limestone		3	Pull #7 Continued
	96			100		Pull 8 95.0'-98.4' Run 3.4' Rec 3.4'
	98				4	
	100			103		Pull 9 98.4'-101.4' Run 3.0' Rec 3.1' C.G. 0.1'
	102					Pull 10 101.4'-104.9' Run 3.5' Rec 3.5'
-55.5	104		SM- Sand, greenish gray, soft, loosely consoli- date fine-med grain calcareously cemented glauconitic. Contains some cemented zones of calcareous glauconitic arkose		5	
	106			100		Pull 11 104.9'-108.9' Run 3.8' Rec 3.8'
	108				6	
-60.4			Bottom of Hole 108.9'			

59

Hole No. 50

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		ST. Stephens S.C.		1 OF 14 SHEETS	
1 PROJECT COOPER RIVER REDIVERSION				10. SIZE AND TYPE OF BIT 4x5 1/2" Core Bbl & 4x5 1/2"			
2 LOCATION (Coordinates or Station) STA 594+70				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Denison Bbl			
3 DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314			
4 HOLE NO. (As shown on drawing title and file number) 50				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 43 UNDISTURBED 40	
5 NAME OF DRILLER Gailander				14. TOTAL NUMBER CORE BOXES 10			
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15 ELEVATION GROUND WATER 6.4		16 DATE HOLE STARTED 27 May 74 COMPLETED 3 June 74	
7 THICKNESS OF OVERBURDEN 86.2				17 ELEVATION TOP OF HOLE 60.7			
8 DEPTH DRILLED INTO ROCK 37.5				18 TOTAL CORE RECOVERY FOR BORING 85.4 %			
9. TOTAL DEPTH OF HOLE 123.7				19 SIGNATURE OF INSPECTOR William E. Hancock			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
60.7	0 b	c	d	e	f	g	
	1		ML- Clayey silt with little plasticity, tan	21	1	Pull 1 1.0'-3.4' Run 2.4' Rec 0.5' CL 1.9' LAB CLASSIFICATION ELEV. CLASS 54.7-56.4 SC 47.3-48.8 SW-SM 36.4-38.1 CH 29.9-31.3 SM W/Clay 31.1-29.1 SM 27.8-29.1 CH W/Sand 19.1-20.2 SM 14.1-15.9 SC 12.2-13.8 SC 7.8-9.0 SP-SM 3.9-5.5 SM -1.2-(0) SP	
	4		SC- Clayey sand, micaceous, light grey with limonite staining, plastic	100		Pull 2 3.4'-4.1' Rec 0.7' Run 0.7' CL 0.0'	
	5			100		Pull 3 4.1'-6.5' Run 2.4' Rec 2.4' CL 0.0' LAB CLASSIFICATION ELEV. CLASS 6.9-(-5.8) SP 10.6-(-9.5) SP-SM 15.6-(-14.6) SP-SM 19.1-(-18.1) SP-SM 23.8-(-22.4) SC	
	6		MC 18.0				
-----Cont on sheet #2----- Note: Soils field classified in accordance with the Uni- fied Soil Classification System.							

60

DRILLING LOG (Cont Sheet)

ELEVATION

TOP OF HOLE

00.7'

INSTALLATION

Hole No. 20

SHEET 2

OF 14 SHEETS

Cooper River Rediversion

St. Stephens S.C.

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

(Description)

% CORE BOX OR

RECOVER

SAMPLE

ERY

NO

REMARKS

Drilling time, water level, depth of

weathering, etc., if significant

54.7

6h

d

C

I

R

SM- Silty sand, tan

Pull 3 Cont.

Pull 4

6.5'-8.5'

Run 2.4'

Rec 2.4'

100

7

8

9

10

100

11

12

Pull 6

11.3'-13.7'

Run 2.4'

Rec 2.2'

CL 0.2'

92

13

MC

18.0%

Cont on sheet #3

61

DRILLING LOG (Cont Sheet)		ELEVATION	OP OF HOLE	Hole No. 50		
PROJECT		INSTALLATION		SHEET 3 OF 14 SHEETS		
Cooper River Rediversion		St. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
46.7	14b		d			
	15		SM- Silty sand, tan	75	1	Pull 7 13.5'-15.7' Run 2.4' Rec 1.8' CL 0.6'
	16			80		Pull 8 15.7'-17.2' Run 1.5' Rec 1.2' CL 0.3'
43.5	17					
	18		GM- Silty sandy gravel, brown, wet, round to subround gravel, coarse to fine sand silt mixture, loose free draining	88	2	Pull 9 17.2'-19.7' Run 2.5' Rec 2.2' CL 0.2'
41.7	19		19.5'-19.7' Clay seam, fat			
	20		SM- Silty sand, tan non homogenous, varved with 1/16-1/32 clay seams	100		Pull 10 19.7'-22.1' Run 2.4' Rec 2.5'
	21					
	22					

Cont on sheet #4

62

DRILLING LOG (Cont Sheet)

PROJECT

Cooper River Rediversion

00.7'

ST. Stephens S.C.

Hole No.

14

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS <i>Logging time, water, etc.</i> <i>Weather, etc. (if applicable)</i>
38.7'	22h					
	23		SM- Silty sand, tan non-homogenous, varved with clay seams	100	2	Pull 11 22.1'-24.5' Run 2.4' Rec 2.4'
	24		24.3'-24.5', fat clay	MC 45.0%		
	25			100	3	Pull 12 24.5'-26.4' Run 1.9' Rec 1.9'
	26					
34.	27		SC- Sand, light gray, fine subangular qtz mica sand varved with silty clay	100		Pull 13 26.4'-27.9' Run 1.5' Rec 1.5'
	28					
	29			100		Pull 14 27.9'-29.4' Run 1.5' Rec 1.5'
	30					Pull 15 29.4'-31.1' Run 1.7' Rec 2.1'

Cont on sheet #5

63

DRILLING LOG (Cont Sheet)		ELEVATION - TOP OF HOLE 60.7'	Hole No. 50	
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens S.C.	SHEET 5 OF 14 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	REMARKS Drilling time, water loss, depth of penetration, etc. (if significant)
30.7	30 ^b		SC- Sand, light gray, fine, subangular mica Qtz. sand, varved with clay seams	Pull 15 Continued
	31			
	32			Pull 16 31.6'-33.2' Run 1.6' Rec 1.6'
	33			Pull 17 33.2'-34.7' Run 1.5' Rec 1.5'
	34			
	35			Pull 18 34.7'-35.6' Run 0.9' Rec 0.9'
25.2	36		SW- Sand, gray, wet	Pull 19 35.6'-36.4' Run 0.8' Rec 0.8'
	37			Pull 20 36.4'-37.4' Run 1.0' Rec 1.0'
	38			Pull #21 37.4' to 39.4' Run 2.5' Rec 0.5' CL 2.0'

64

DRILLING LOG (Cont Sheet)		ELEV	TOP OF HOLE	Hole No. 50	
PROJECT		INSTALLATION		SHEET 6 OF 14 SHEETS	
Cooper River Rediversion		St. Stephens S.C.		REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.
22.7	38.6		SW- Sand, gray, wet	20	
	39		39.4-39.9 Clayey Sand, plastic	71	
	40				4
	41			MC 35.0%	
	42				
	43			84	
16.0	44		SC- Sand, light gray, fine subangular mica qtz sand varved with clay seams.		5
	45			95	
	46				

Pull #21 Cont Inued

Pull 22
39.4'-42.3'
Run 2.4'
Rec 1.7'
CL 0.7'

Pull 23
42.3'-44.8'
Run 2.5'
Rec 2.1'
CL 0.4'

Pull 24
44.8'-46.9'
Run 2.1'
Rec 2.0'
CL 0.1'

-----Cont on sheet #7-----

65

DRILLING LOG (Cont Sheet)

ELEVAT

TOP OF HOLE

60.7'

Hole No. 50

PROJECT

Cooper River Rediversion

INSTALLATION

ST. Stephens S.C.

SHEET 7

OF 14 SHEETS

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
Description

CORE
RECOVER
ERY

SOIL OR
SAMPLE
NO

REMARKS

(Drilling time, water loss, depth of
weathering, etc., if significant)

14.7

46'



SC- Sand, light gray, fine
subangular mica qtz. sand
varved with clay seams

MC
48.0%

Pull #24 Continued

47

100

Pull 25
46.9'-49.1'
Run 2.2'
Rec 2.2'

48

5

MC
88.0%

49

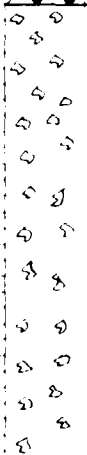
86

Pull 26
49.1'-50.5'
Run 1.4'
Rec 1.2'
CL 0.2'

50

51

51



SW- Calcareous sand, light
gray, bioclastic, wet.

86

Pull 27
50.5'-51.7'
Run 1.4'
Rec 1.2'
CL 0.2'

52

MC
74.0%
100

Pull 28
51.7'-53.4'
Run 1.7'
Rec 1.7'

53

6

100

Pull 29
53.4'-55.2'
Run 1.8' Rec 1.8'

54

Cont on sheet #8

66

DRILLING LOG (Cont Sheet)		ELEVATION	DP OF HOLE	Hole No.		
PROJECT		INSTALLATION		SHEET 8		
Cooper River Rediversion		St. Stephens S.C.		OF 14 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.7	54.6					
			SW- Calcareous sand, light gray, bioclastic, wet.			Pull #29 Continued
	55			88		Pull 30 55.2'-57.7' Run 2.5' Rec 2.2' C.L. 0.3'
	56			MC 26.0%		
					6	
	57					
2.7	58		SW- Sand, glauconitic, green gray, coarse mica qtz. loose, wet.	00		Pull 31 57.7'-58.2' Run 0.5' Rec 0.0' CL 0.5'
	59			130		Pull 32 58.2'-60.2' Run 2.0' Rec 2.6' C.G. 0.6'
	60			MC 20.0%		
	61			100		Pull 33 60.2'-62.5' Run 2.3' Rec 2.3'
	62		-----Cont on sheet # 9 -----			

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67

DRILLING LOG (Cont Sheet)		ELEVATION	DEPTH OF HOLE	Hole No. 50		
PROJECT		INSTALLATION		SHEET 9 OF 14 SHEETS		
Cooper River Rediversion		St. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-1.3	62 b	c	d		6	Pull #33 Continued
	63		SW- Sand, glauconitic, green gray, coarse mica qtz. sand, loose wet.	100		Pull 34 62.5'-64.2' Run 1.8' Rec 1.8'
	64					
	65			128		Pull 35 64.2'-65.6' Run 1.4' Rec 1.8' C.G. 0.4'
	66			100	7	Pull 36 65.6'-66.5' Run 0.9' Rec 0.9'
	67			100 MC 23.0%		Pull 37 66.5'-68.0' Run 1.5' Rec 1.5'
	68			82		Pull 38 68.0'-70.2' Run 2.2' Rec 1.8' C.L. 0.4'
	69				8	
	70	-----Cont on sheet #10-----				

68

DRILLING LOG (Cont Sheet)		ELEVATION	DEPTH OF HOLE	Hole No. 50	
PROJECT		INSTALLATION		SHEET 10	
Cooper River Rediversion		St. Stephens S.C.		14	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	TO CORE BOX OF RECOVER SAMPLE (%)	REMARKS
-9.3	70		SW- Sand glauconitic		Pull 39 70.2'-71.9' Run 1.7' Rec 1.7'
	71			100 MC 24.0%	
	72			8	Pull 40 71.9'-74.4' Run 2.5' Rec 1.3' C.L. 1.2'
	73			52	
	74				
	75			52	Pull 41 74.5'-76.9' Run 2.5' Rec 1.3' C.L. 1.2'
15.3	76		SC- Clayey sand, green brown, silt-clay-sand mixtures.	MC 27.0%	
	77			80	Pull 42 76.9'-77.9' Run 1.0' Rec 0.8' C.L. 0.2'
	78				

---Cont on sheet #11---

69

DRILLING LOG (Cont Sheet)		ELEVATION	DEPTH OF HOLE	Hole No. 50		
PROJECT		Cooper River Rediversion		INSTALLATION		SHEET 11 OF 14 SHEETS
				St. Stephens S.C.		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-174.3	78	c	d	e	f	g
	78		SC- Clayey sand, green brown, silt-clay sand mixtures.	64	8	Pull 43 77.9'-80.4' Run 2.5' Rec 1.6' C.L. 0.9'
	79				MC 22.0%	
	80					
	81			00		Pull 44 80.4'-82.9' Run 2.5' Rec 0.0' C.L. 0.0'
	82				9	
	83		83.2'-85.0' Clayey sand becoming strongly calcar- eous, bioclastic and glauconitic.	00		Pull 45 82.9'-83.2' Run 0.4' Rec 0.0' CL 0.4'
	84			105		Pull 46 83.2'-85.1' Run 1.9' Rec 2.0' C.G. 0.1'
	85			MC 23.0%		
	86			100		Pull 47 85.1'-86.7' Run 1.6' Rec 1.6'
			Cont on sheet # 12			

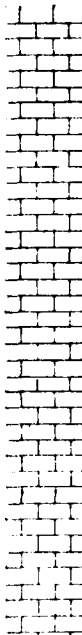
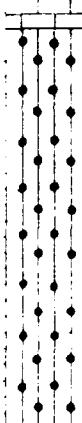
DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 50		
PROJECT		INSTALLATION		SHEET 12 OF 14 SHEETS		
Cooper River Rediversion		St. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-25.3	86h	c	d	e	t	R
-25.4			Top of Rock 86.1'			Pull 47 Cont.
	87		Clay shale, calcareous, dark gray to black, with sandy lenses, blocky 86.7'-87.3' indurated sandstone seams.	43		Pull 48 86.7'-88.8' Run 2.1' Rec 0.9' C.L. 1.2'
	88				9	
	89					Pull 49 88.8'-90.4' Run 1.6' Rec 1.6'
	90			100		
	91			100		Pull 50 90.4'-94.4' Run 4.0' Rec 4.0'
	92				10	
	93					
94	-----Cont on sheet #13-----					

71

DRILLING LOG (Cont Sheet)		ELEVATION	TOP OF HOLE	Hole No. 50		
PROJECT		INSTALLATION		SHEET 13 OF 14 SHEETS		
Cooper River Rediversion		ST. Stephens S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) k
-33.3	94 ^b		Scale change 94.0'			Pull #50 Continued
	96		Clay shale, calcareous soft, dark gray to black.	84	10	Pull 51 94.4'-96.9' Run 2.5' Rec 2.1' C.L. 0.4'
	98			114		Pull 52 96.9'-101.4' Run 4.3' Rec 4.9' C.G. 0.6'
	100		101.0'-101.3' glauconitic zone moderately hard, cemented.		11	
-40.6	102		Limestone "Coquina" gray, soft to moderately hard, vuggy, glauconitic, sandy seams and concretions	94		Pull 53 101.4'-106.2' Run 4.8' Rec 4.5' C.L. 0.3'
	104					
	106				12	
	108			105		Pull 54 106.2'-110.4' Run 4.2' Rec 4.4' C.G. 0.2'
	110					

---Cont on sheet #14---

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DRILLING LOG (Cont Sheet)		ELEVAT	OP OF HOLE	Hole No. 50	
PROJECT		INSTALLATION		SHEET 14	
Cooper River Rediversion		St. Stephens S.C.		SHEET 14	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	RECOVERY	REMARKS
49.3	110		Limestone "Coquina"	100	Pull 55 110.4'-115.0' Run 4.6' Rec 4.6'
	112				
	114				
	116		92	13A	Pull 56 115.0'-118.9' Run 3.9' Rec 3.6' C.L. 0.3'
157.5	118		SM- Sand green gray, strongly glauconitic, calcareous, well graded coarse-fine.	100	Pull 57 118.9'-123.7' Run 4.8' Rec 4.8'
	120			13B	
	122				
	Bottom of Hole 123.7'				

73

DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 6 SHEETS	
1. PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.			
2. LOCATION (Coordinates or Station) Sta. 601+10, 12.0' Right of Center Line		10. SIZE AND TYPE OF BIT 4x5 1/2" Core Bbl. & 4x5 1/2"		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Denison Bbl		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME-75B				
4. HOLE NO. (As shown on drawing title and file number) 51		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 12	UNDISTURBED 3	
5. NAME OF DRILLER Scott		14. TOTAL NUMBER CORE BOXES 9		15. ELEVATION GROUND WATER 44.0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		16. DATE HOLE 15 JAN 1975		STARTED 15 JAN 1975 COMPLETED 26 JAN 1975		
7. THICKNESS OF OVERBURDEN 70.1'		17. ELEVATION TOP OF HOLE 46.0				
8. DEPTH DRILLED INTO ROCK 22.7'		18. TOTAL CORE RECOVERY FOR BORING ROCK 97.4 %				
9. TOTAL DEPTH OF HOLE 92.8'		19. SIGNATURE OF INSPECTOR Charles G. Canning				

ELEVATION a	DEPTH 0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
45.0	1.0		Black to Tan, Silty sand (Fill material)			J=Jar Sample S=Shelby Sample D=Denison Sample W=Waxed Sample
	2		Sand, Yellow to Tan, fine to very fine grain, containing some layers of clay. (SM)	MC 21.0% 22.0%	J-1 S-1 J-2	Push 2.0' to 3.5'
	4		NOTE: Lithology contacts of the overburden are approximated.			
	5.6				J-3 S-2 J-4	Push 4.5' to 5.6'
40.4	6		Sand, Yellow to Tan, fine to very fine with gravel. (GM)	MC 24.0%	J-5 S-3 J-6	Push 5.6' to 7.2'
	8			MC 26.0% 61.5	D-4 J-7	Pull #4. 7.2' to 8.5'. Run 1.3' Rec 0.8' CL 0.5'
	8.5		Sand, greenish gray, fine to very fine, interbedded with consolidated clay, calcareous, Contains some leached fossil remains.	0.0		LOST CLEANING HOLE.
	10			78.2 MC 43.0%	BOX 1 D-5 J-8	Pull #5 9.2' to 11.5' Run 2.3' Rec 1.8' CL 0.5'
	12			0.0		LOST WASHING HOLE WITH MUD.

CONTINUED ON PAGE 2

Off. Soils field classified
in accordance with the Unified
Soil Classification System.

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NOTE: Lab. Classifi-
cations, see page 6.

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
46.0

Hole No. 51

PROJECT
Cooper River Rediversion

INSTALLATION
St. Stephen, S.C.

SHEET
2
OF 6 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	12h					
			Sand, greenish gray, fine to very fine, interbedded with consolidated clay, calcareous, Contains some leached fossil remains.	0.0	BOX 1	
	14			MC 54.0% 80.1	J-9 Denn. 6	Pull #6 13.5' to 15.5' Run 2.0' Rec 2.0'
	16			32.2	J-10 Denn. 7	NOTE: Sample contaminated. Pull #7 15.5' to 18.6' Run 3.1' Rec 1.0' CL 2.1'
	18				J-11	
	20			0.0	BOX 2	
				88	Denn. 8	Pull #8 19.6' to 22.1' Run 2.5' Rec 2.0' CL 0.5'
	22				J-13	IN SHOE
				88	J-14 Denn. 9	Pull #9 22.1' to 24.6' Run 2.5' Rec 2.2' CL 0.3'
	24					IN SHOE
			Sand, greenish gray, fine to very fine grain, interbedded with consolidated clay, calcareous, fissil bedded, contains small amounts of organic material, "peat lignite"	80	J-15 Denn. 10	Pull #10 24.6' to 27.1' Run 2.5' Rec 2.0' CL 0.5'
	26				BOX 3	IN SHOE
				80	Denn. 11	Pull #11 27.1' to 29.6' Continued
	28					

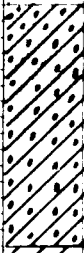


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


DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 46.0		Hole No. 51			
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 3 OF 6 SHEETS			
ELEVATION a	DEPTH 28.6	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			Sand, greenish gray, fine to very fine grain, interbedded with consolidated clay, calcareous, fissil bedded, contains small amounts of organic material, "peatlignite"		BOX 3	11 Denn. J-16	
30						LOST OUT OF SHOE Pull #12 29.6' to 32.1' Run 2.5' Rec 1.8' CL 0.7'	
32				72		Denn. 12	IN SHOE LOST OUT OF SHOE
34					56	BOX	Pull #13 32.1' to 34.6' Run 2.5' Rec 1.4' CL 1.1'
36					88	BOX	Pull #14 34.6' to 37.1' Run 2.5' Rec 2.2' CL 0.3'
38				32	BOX	Pull #15 37.1' to 39.6' Run 2.5' Rec 0.8' CL 1.7' Started using 4x5 1/2 Bottom Discharge Barrel @39.6'	
40			Sandstone, calcareous				
42			Sand, greenish gray, fine to very fine grain, interbedded with consolidated clay, calcareous, fissil bedded, contains small amounts of organic material, "peat-lignite"	63.3		Pull #16 39.6' to 42.6' Run 3.0' Rec 1.9' CL 1.1'	
44				46.6	BOX 5	WAX 13	Pull #17 42.6' to 45.6' Run 3.0' Rec 1.4' CL 1.6'

Continued on Sheet #4

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 51		
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc., if significant)
a	44b		d			
			Sand, Greenish gray, fine to very fine grain interbedded with consolidated clay, calcareous, fissil bedded, contains small amounts of organic material, "Peat-lignite."			Pull #17 Continued
	46			0.0		Last washing hole
-1:				100	Box 5	Started using Dennison at 46.0'
			Light Gray, Consolidated Clay		J-17	Pull #18, 46.0' to 47.2', Run 1.2' Rec 1.2' Sample Contaminated
	48			66.6		Pull #19, 47.2' to 49.6' Run 2.4' Rec 1.6' CL 0.8' Sample in core box
-			Sand SP fine grain greenish gray, contains leached fossil remains interbedded w/clay, Lt. Gray, Consolidated.			4x5 1/2 at 49.6'
-	50		Limestone, Argillaceous			Pull #20 49.6' to 51.9' Run 2.3' Rec 0.4' CL 1.9'
				17.4		Pull #21 51.9' to 54.7' Run 2.8' Rec 0.7' CL 2.1'
	52		Sand, fine grain, greenish gray, contains leached fossil remains interbedded w/clay, Light gray, consolidated "SM-CL"			Denison at 54.7'
				25		Pull #22 54.7' to 58.1' Run 3.4' Rec 0.6' CL 2.8'
	54					
	56			21.4	Box 6	4x5 1/2 at 58.1'
						Pull #23, 58.1' to 58.6' Run 0.5' Rec 0.0' CL 0.5'
	58			0.0		Pull #24 Continued
	60					
Continued on Sheet #5						

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +46.0		Hole No. 51		
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.			SHEET 5 OF 6 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	60 ^b		Sand, fine grain, greenish gray, contains leached fossil remains interbedded w/clay light gray, Continued	30			Pull #24 - CL 2.1' 58.6' to 61.6' Run 3.0' Rec 0.9' Denison at 61.6'
	62		Sand, greenish gray, with interbedded clay, consolidated, containing some organic material	40			Pull #25 61.6' to 64.1' Run 2.5' Rec 1.0' CL 1.5'
-1.0	64		Sand fine grain to medium grain, contains a few clay lamina, 0.2" thick. (SP-SM) (Water Bearing). Hole started to flow @ 64.2'	72		J-18 J-19	Pull #26 - CL 0.5' 64.1' to 65.6' Run 1.5' Rec 1.0' 4x5½ at 65.6'
	66					J-20 J-21	Pull #27 65.6' to 70.1' Run 4.5' Rec 2.8' CL 1.7'
	68			62.2	Box 6		
-2.0	70		TOP OF ROCK 70.1'			J-22	Tube Barrel at 70.1'
	72		Sandstone, Argillaceous, greenish gray, hard to soft, material varies to a clayey sand to some layers of hard well cemented sandstone Blended Spl. Classifies as (SM)	56 MC 24.0%		 3" Tube 15	CONC LOSS Pull #28 70.1' to 72.6' Run 2.5' Rec 1.4' CL 1.1'
	74		Sandstone, Calcareous, light gray, fine grain hard well cemented.	60		J-23 J-24	Pull #29 - CL 0.4' 72.6' to 73.6' Run 1.0' Rec 0.6' 4x5½ at 73.6'
	76		Sandstone, Continued Continued on Sheet #6	100			Pull #30 73.6' to 78.6' Run 5.0' Rec 5.0'

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +46.0		Hole No. 51		
PROJECT		INSTALLATION		SHEET 6 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, depth of weathering, etc., if significant)
	76b		Sandstone, Argillaceous, greenish gray, hard to soft, varies to a clayey sand, highly consolidated			Pull #30 Continued
	78					
-32.4			Clay-Shale, dark gray, dense, Medium hard to soft, fissile bedded, Slakes readily upon exposure to air.		Box 7	Pull #31 78.6' to 83.6' Run 5.0' Rec 5.0'
	80		LAB CLASSIFICATION			
			ELEV. CLASSIFI.	100		
			43.5-44.0 SM			
			42.5-43.5 SM			
			38.8-40.4 SP-SM			
	82		38.1-38.8 SP-SM			
			35.1-36.8 CH (Sandy)			
			32.0-33.5 CH (Sandy)			
			32.5-32.0 SC			
			24.6-24.4 SM			
	84		27.2-27.0 CH (Sandy)			
				84		Pull #32 83.6' to 86.8' Run 3.2' Rec 2.7' CL 0.5'
	86				Box 8	
						Pull #33 86.8' to 89.8' Run 3.0' Rec 3.0' CG 0.5'
	88					
				117		
	89					
-33.3			Glauconitic Zone, Limestone, Sandy, Hard.			
-34.1			Shell Limestone, "Coquina", soft to moderately hard.	70	Box 9	Pull #34 89.8' to 92.8' Run 3.0' Rec 2.1' CL 0.1'
	92					
	92.8		BOTTOM OF HOLE 92.8'			
			Plugged hole w/ 9 sacks of cement.			

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DRILLING LOG		DIVISION South Atlantic	INSTALLATION St. Stephens, SC	SHEET 1 OF 8 SHEETS
1 PROJECT Cooper River Rediversion		10 SIZE AND TYPE OF BIT 4x5 1/2 Core BBl & 4x5 1/2		
2 LOCATION (Coordinates or Station) Powerhouse Site 75.0' Left of E Stat. 597 + 90		11 DATUM FOR ELEVATION SHOWN (TBM or MSL) Denison Bbl 'MSL		
3 DRILLING AGENCY Savannah District		12 MANUFACTURER'S DESIGNATION OF DRILL CME 75		
4 HOLE NO. (As shown on drawing title and file number) 52		13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		
5 NAME OF DRILLER T. W. Scott		14 TOTAL NUMBER CORE BOXES 7		
6 DIRECTION OF HOLE X VERTICAL DEGREE FROM VERT.		15 ELEVATION GROUND WATER 50.3' MSL		
7 THICKNESS OF OVERBURDEN 78.5'		16 DATE HOLE STARTED 1-28-75 COMPLETED 1-31-75		
8 DEPTH DRILLED INTO ROCK 44.1'		17 ELEVATION TOP OF HOLE 52.8'		
9 TOTAL DEPTH OF HOLE 122.6'		18 TOTAL CORE RECOVERY FOR BORING 93 %		
		19 SIGNATURE OF INSPECTOR William E. Hancock, Geologist		


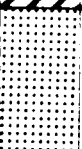
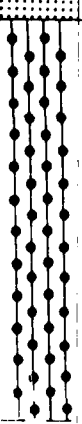
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		SM, Silty Sand, black, grey & tan, depth variegated. Initially black w/organic clay in small %.		J-1	W.T. 7.0' Date 1/28/75 Depth to water during drilling
	2		-grey fine to coarse grain w/small % gravel.		J-2	W.T. 2.5' Water table reading 24 hrs. after hole completed.
	4				J-3	J = Jar Sample
					J-4	S = Shelby
					J-5	D = Denison Sample
						W = Waxed Sample
	6		- Aquifer			
			- - Fine grain poorly sorted, tan.			
	8				J-6	
	10				J-7	
	12				J-8	

CONTINUED ON SHEET 2

NOTE: Soils field classified
in accordance with the Unified
Soil Classification System.

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		52.8'		52		
Cooper River Rediversion		INSTALLATION		SHEET 2		
		St. Stephens, SC		OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM - Silty sand (continued from Page 1)			
38.8	14				J-9	
	16		Dark green to blue green, very fine & fine grain sand - silt mixture, slightly plastic, micaceous, small % of glauconite and phosphite grains occasional seam & lense of stiff fat clay - fossil molds. (ML)			
	18				J-10	18.0 - 23.0 high of silty sand mixed in
	20				J-11	
	22				J-12	
	24		- tan, fine grain silty sand seam		J-13	24.0- 25.0 gradational from tan to blue green, also high of silty sand mixed in.
	26				J-14	
25.8	27.0					
	28		CH - Dark green blue to black, sandy fat clay.		J-15	
CONTINUED ON SHEET 3						

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 52.8'		Hole No. 52		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, SC		SHEET 3 OF 8 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	30		Dark blue green to black sandy fat clay, laminated with silty sand lenses and silty organic layers, mica bearing in parts.			All jar samples collected from 4" auger
				J-16	29.0-30.0 lean clay seam.	
				J-17		
	32					
	34					
	36				J-18	
	38		Blue grey lean silty sandy clay, mica bearing, inter- layered SP-CH			
	40		Dark green very fine to fine grain poorly sorted silty sand glauconitic; occasional 1/8" seams of silt and clay. -SM-		J-19	
	42				J-20	
	44					

CONTINUED ON SHEET 4

82

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
52.8'

Hole No. 52

PROJECT

INSTALLATION

SHEET 4

Cooper River Rediversion


St. Stephens, SC

LOG 8 SHEET

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <small>(Drilling time, water used, etc.)</small>
			SM - Blue green, silty fine grain sand			
	46				J-21	
4.8	48		SC - Blue green silty clayey fine grain sand			
	50				J-22	
1.8	52		SP - Blue green fine grain, poorly sorted sand			
-0.2	54		SM - Green very fine to fine grain poorly sorted silty sand glauconitic, occasional seams of silt and clay approx 1/8" thick			
	56					
	58					
	60					Fish tailed 4" OD 6 inch OD mudded hole for wall support,






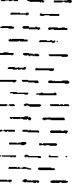


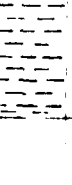

CONTINUED ON SHEET 5

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	52.8'		Hole No.		52	
PROJECT			INSTALLATION			SHEET		5	
Cooper River Rediversion			St. Stephens, SC			OF		8 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)		% CORE RECOV- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		
a	b	c	d		e	f	g		
	62		SM-green, poorly sorted silty sand.		6.6		Core Loss Pull 1 Fm 59.1 to 62.1 Run 3.0 Rec 0.2 Loss 2.8		
	64				5.0		Core Loss Pull 2 Fm 62.1 to 64.1 Run 2.0 Rec 0.1 Loss 1.9		
	66					J-23	1 3/8" I.D. splitspoon re- covered sample. Required 175 blows to pene- trate 1.0'.		
	68				89.0	D-1	Pull 3 Fm 66.6 to 69.3 Run 2.7' Rec 2.4' Loss 0.3		
	70				55.2		Core Loss Pull 4 Fm 69.3' to 72.2 Run 2.9' Rec 1.6' Loss 1.3'		
	72					J-25			
	74				59.3		Pull 5 Fm 72.2' to 74.9 Run 2.7' Rec 1.6' Loss 1.1'		
	76				72.4		Pull 6 Fm 74.9' to 77.8 Run 2.9'-Rec 2.1		
-23.2									
CONTINUED ON SHEET 6									
84									

CONTINUED ON SHEET 6













84

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE		Hole No. 52	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephens, SC		SHEET 6 OF 8 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS g (Drilling time, water loss, depth of weathering, etc. if significant)
	78		SC - Dark green, well consolidated clayey sand, slightly calcareous, soft, contains fragmented shells, i.e. carbonate - sandy marl.	72.4	D-3	Fishtailed & set 6" casing to 78.8' grout outside & cemented from 67' to top of rock.
25.7	78.5		Top of Rock 78.5'		J-27	
	80		Sandstone, argillaceous, green to grey, well indurated, hard, calcareous in part, massive, blocky fracture, shell fragments in matrix	118	D-4	Pull 7 Fm 77.8 to 80.0 Run 2.2 Rec 2.6 Gain 0.4
28.2	81.0				W-8	Pull 8 Fm 80.0 to 82.8 Run 2.8 Rec 2.8
	82		Shale - "Claystone" - Shale, dark green to dark grey, consolidated, massive in part - fissile in part, initially very silty sandy, tendency to slake when drying, soft, lutite.	100	W-9	
	84			100	W-10	Pull 9 Fm 82.8 to 85.8 Run 3.0 Rec 3.0
	86				W-11	Pull 10 Fm 85.8 to 89.0 Run 3.2 Rec 3.2
	88			100	W-12	
	90		- Wholly clay, blocky choncooidal fracture	100	W-14	Pull 11 Fm 89.0' to 92.8' Run 3.8 Rec 3.8
	92				W-15	

CONTINUED ON SHEET 7


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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 52		
PROJECT		INSTALLATION		SHEET 7		
Cooper River Rediversion		St. Stephens, SC		OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			Shale - "Claystone"		W-15	Pull 11 Continued
						Pull 12
-41.0	93.8					Fm 92.8 to 95.8
-41.2	94		Glaucinite zone, Limestone sandy, hard.	100	W-16	Run 3.0 Rec 3.0
			Limestone, "Coquina" dark green, to grey, coarse angular shell fragments, imbricate, in fine carbonate sand matrix, vuggy, moderate- ly hard, well cemented, pseudo horizontal parting due to oyster shell position.	100	W-17	
	96		Consolidated lime rubble Calciurudite		W-18	Pull 13 Fm 95.8 to 98.8 Run 3.0 Rec 3.0
	98		-97.0 - 97.6 soft glauconitic sand zone		W-19	
	100			100	W-20	Pull 14 Fm 98.8 to 101.8 Run 3.0 Rec 3.0
					W-21	
	102		- 100.2 - 100.4 Soft glauconi- tic sand zone	90		Pull 15 Fm 101.8 to 104.8 Run 3 Rec 2.7 Loss 0.3
	104		104.8 - 105.4 Broken - Soft zone			
				87		Pull 16 Fm 104.8' to 107.9 Run 3.1 Rec 2.7 Loss 0.4
	106		- 106.9 - 107.9 Soft zone		W-22	
	108					
CONTINUED ON SHEET 8						
86						

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		52.8'		52		
PROJECT		INSTALLATION		SHEET 8		
Cooper River Rediversion		St. Stephens, SC		OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc. if available)
a	b	c	d	e	f	g
			Limestone, "Coquina"			Pull 17
				100	W-23	Fm 107.9 to 110.9 Run 3.0 Rec 3.0
			Low Angle			
57.4	110		Normal depositional contact		W-24	
	110.2		SM - Sand, fine to Silty			
58.1	110.9		Glauc. sandstone with 23° oblique fracture			Pull 18
58.7	111.5		SM-green with shell fragments spread randomly-fine grain poorly sorted, mica bearing		W-26	Fm 110.9 to 113.9 Run 3.0 Rec 3.0
	112			100		
	114		SM - Sand, light green, silty, glauconitic, slightly carbonaceous, contains some shell fragments and disseminated mica.		W-27	Pull 19 Fm 113.9 to 118.9 Run 5.0 Rec 4.4 Loss 0.6
	116					
64.1	116.9		Limestone, Coquina, dark green to grey, imbricate coarse angular shell fragments in carbonate fine grain sand matrix, vuggy, moderately hard, well cemented, pseudo horizontal parting due to oyster shell arrangement, consolidated lime rubble - calcirudite	88		Core Loss
	118				W-28	
	120					Pull 20
67.9	120.7		SM - green silty glauconitic sand, fine grain, poorly sorted, shell bearing.	86		Fm 118.9 to 122.6 Run 3.7 Rec 3.2 Loss 0.5
	122					Core Loss
69.8	122.6				W-30	
			BOTTOM OF HOLE 122.6'			


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DRILLING LOG		DIVISION South Atlantic		INSTALLATION St. Stephen		SHEET 1 OF 9 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 4x5 1/2" Core Bbl & 1 3/8" ID			
2. LOCATION (Coordinates or Station) G Station 597+90 75.0' Right G				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 6" Fishtail			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL J-1			
4. HOLE NO. (As shown on drawing title and file number)				13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NUMBER CONE BOXES	
				16		7	
5. NAME OF DRILLER T. W. Scott				15. ELEVATION GROUND WATER		51.0'	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED				16. DATE HOLE STARTED		17. DATE HOLE COMPLETED	
				8 Feb 75		10 Feb 75	
7. THICKNESS OF OVERBURDEN 77.5'				17. ELEVATION TOP OF HOLE		51.8'	
8. DEPTH DRILLED INTO ROCK 72.5'				18. TOTAL OVERBURDEN FOR BORING		84.5'	
9. TOTAL DEPTH OF HOLE 150.0'				19. NAME OF DRILLER E. Hancock and Charlie Deaver			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIAL (See Note)	SOIL RECORD NO.	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	2		Clayey Sand and sand with clay, light tan, overlain by black silt. Small amount of organic matter. -SM-CL-SC- Sands are uniform, graded, subangular, dense. Clay is soft to firm homogeneous.		J-1	Drilling by 6 inch fish-tail bit in overburden with use of mud for wall support.	
	4					Soils sampled with 1 3/8" ID splitspoon at 4 foot intervals, blow count not recorded, cuttings monitored. Overburden contacts approximate.	
	6				J-2	W.T. 0.8'	
	8					Date 8 Feb. 75	
	10					Depth to water during drilling	
	12					W.T. 8.0'	
	14					Water table reading 24 hrs. after hole completed.	
42.8	9.0		Green sands, glauconitic silty sands laminated with 1/8 - 1/2 inch consolidated fat clay occasional varied layers of peat-like material. Sands are uniform graded subangular, dense. -SM-FH-SP-		J-3	J = Jar Sample	
	10					W = Waxed Sample	
	12						
CONTINUED ON SHEET 2							
NOTE: Soils field classified in accordance with the Unified Soil Classification System.							

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.			
PROJECT		INSTALLATION		SHEET			
Cooper River Rediversion		St. Stephens, SC		Of 9 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
	14		Green sands, glauconitic silty sands laminated with 1/8 - 1/2 inch consolidated fat clays - occasional varied seams of peat-lignite material. Clays are inorganic, very stiff to hard, laminated to banded. -SM-CH-SC-		J-4		
	16						
	18						
	20					J-5	
	22						
	24						
	26				J-6		
	28						











CONTINUED ON SHEET 3

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET 3		
Cooper River Rediversion		St. Stephens, SC		OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling note, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			Green sands, glauconitic silty sands, laminated with 1/8 to 1/2" consolidated fat clay layers. Occasional varied layers of peat-lignite material -SM-CH-CL-			
	30					
	32					
	34					
	36					
	38					
	40					
	42					
	44					

CONTINUED ON SHEET 4

90

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 51.8'	Hole No. 53		
PROJECT Cooper River Rediversion			INSTALLATION	SHEET 4		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
48	45		See Sheet No. 3			
	46		Lean clay and silt, greenish brown to brown. Very fine sands in silt matrix. Sand is uniform graded, subangular to subround. Lean clay (CL), on the whole is firm.		J-10	
	48		CL, ML.			
	50				J-11	
	52					
	54					
44.2	55					
	56		Fine green glauconitic sands with some silt. Sands are homogenous, uniform graded, subangular and dense		J-12	
	58		SM, SP.			
	60					

CONTINUED ON SHEET 5

91

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 51.8'		Hole No. 53	
PROJECT Cooper Rediversion		LOCATION St. Francis, MO		SHEET 5 OF 9 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	LOVE BOX OR RECOVER SAMPLE	REMARKS
a	b	c	d	e	f
			Fine green glauconitic sand, SM. SP.	1-13	
	62				
	64				
	66			1-14	
	68				
	70			1-15	
	72				
-22.2	74		refusal		
			Sand, green, and illite sandstone with some silty, calcareous sands, dense, with some carbonaceous material.		
	76				

92

AD-A149 576

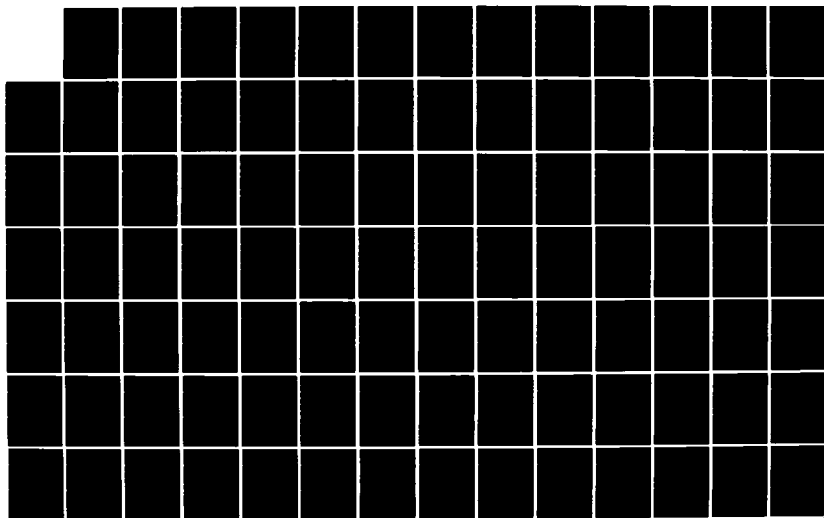
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) ARMY ENGINEER DISTRICT
SAVANNAH GA FEB 76

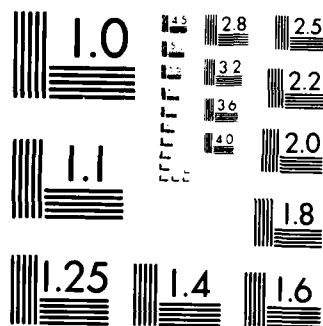
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UNCLASSIFIED

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NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	Hole No.		
PROJECT			51.8'	53		
Cooper River Rediversion			INSTALLATION	SHEET 6		
St. Stephens, SC			OF 9 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			See Sheet No. 5			
-25.7	77.5		Top of Rock 77.5			
	78		Shale, claystone, lutyte, soft to very soft, hackly fracture. Dark blue grey.			Pull 1 Fm 78.0' to 82.0' Run 4.0' Rec 3.0' Loss 1.0'
-27.2	79.0		Sandstone, argillaceous, blue grey, massively bedded, hard to very hard, fine grain, uni- form sorted.	75		
-28.5	80.3					
			Shale, claystone, lutaceous, dark blue grey, massively bedded, soft.		Box 1	
	82		80.8			
			Fissile, horizontal sand parting, soft.	115		W-1 Pull 2 Fm 82.0' to 84.0' Run 2' Rec 2.3' Gain 0.3'
-32.2	84					W-2
-33.2	85		Sandstone, argillaceous, hard, well cemented, calcareous.			W-3 Pull 3 Fm 84.0' to 86.8' Run 2.8' Rec 2.8'
	86		Shale, claystone, fissile, dark blue grey, non-homo- genous, Lutyte with sandstone seam 1/10" @ 86.6' moderately soft, well consolidated, horizontal parting.	100 MC 65.0%		W-4
-35.0	86.8					
-35.6	87.4					
	88		Dark grey silt stone, argillaceous and arenaceous, calcareous, well cemented, moderately hard, very fine sand, silt and clay.	100	Box 2	Pull 4 Fm 86.8' to 92.0' Run 5.2' Rec 5.2'
	90		Shale, claystone, fissile, dark blue green, lutaceous, soft homogenous, conchoidal fracture.			W-5
	92		Broken 91.5 - 92.0 Displays "slicks" in clay	MC 60.0%		
			CONTINUED ON SHEET 7			

93










DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		53	
PROJECT			INSTALLATION			SHEET 7	
Cooper River Rediversion			St. Stephens, SC			OF 9 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
-40.7	92.5		See Sheet No. 6				Pull 5
-41.2	93.0		Glaucanitic sandstone, green, calcareously cemented, hard, fine grain.			W-6	Fm 92.0' to 95.0' Run 3.0' Rec 3.0'
	94		Limestone, "Coquina", light greenish cream, hard sound rock, abundant glauconite grains in an arenaceous shell rock composed of coarse angular imbricate shell fragments in glau- conitic sandy matrix. Large oster shells give psuedo horizontal parting. Zonal variation follows:		Box 3		Pull 6
	96					W-7	Fm 95.0' to 98.0' Run 3.0' Rec 3.0'
	98		95.3 - 95.4 - Soft rock				Pull 7
			95.7-95.8 - Zones composed 97.8-97.9 of clay-silt matrix with pea size shell fragments			W-8	Fm 98.0' to 101.0' Run 3' Rec 3'
	100		98.0-98.6 - "Poor" rock zone composed of very soft to soft rock, con- sisting of green glau- conitic sandy marl & loose noncemented shell limestone		Box 4		Pull 8
	102					W-9	Fm 101.1' to 104.6' Run 3.6' Rec 3.6'
	104		98.6-98.9 - Cemented soft rock			W-10	Pull 9
			98.9-101 - Vuggy		Box 5	W-11	Fm 104.6' to 107.2' Run 2.6' Rec 2.6'
	106					W-12	
			107.2 - 107.4 - Soft rock composed of sandy marl			W-13	
	108						
CONTINUED ON SHEET 8							
94							

94

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 51.8'		Hole No. 53		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, SC		SHEET 8		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS g (Logging time, water, depth, etc.)
-57.3	109.1		See Sheet No. 7		W-13	Pull 10 Fm 107.2' to 111.0'
-57.5	109.3		Glauconitic sand zone	84	Box 5	Run 3.8' Rec 3.2'
	110		Sandstone, calcareous, cream to grey, medium grain, very hard, massively bedded.		W-14	CL= 0.6
-59.2	111					
	112		Sand, green, argillaceous glauconitic, fine grain, subangular to subrounded, loose.	100	W-15	Pull 11 Fm 111.0' to 114.0' Run 3.0' Rec 3.0'
	114		SM Blended Spl. Lab Classifies as SM			
-63.7	115.5		Sandstone, calcareous, dense	93	Box 6	D-16 Pull 12 Fm 114.0' to 115.5' Run 1.5' Rec 1.4'
-64.3	116.1		Limestone, gray, coquina. Contains zone of sand and uncemented fossil fragments with some pockets of clay.	100	W-17	Pull 14 Fm 118.3' to 121.3' Run 3.0' Rec 3.0'
	118				W-18	
	120			100	W-19	Pull 15 Fm 121.3' to 124.0' Run 2.7' Rec 2.7'
	122				Box 7	
	124			100		
CONTINUED ON SHEET 9						

95

95

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 53		
PROJECT		INSTALLATION		SHEET 9		
Cooper River Rediversion		St. Stephens, SC		OF 9 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
-73.2	125		Lost during washing hole April 29, 1975			Scale Change @ 125.0 124.0 to 125.0 lost washing hole.
-75.5	127.3		Sandy limestone, gray, dense, fossiliferous, with sand pockets.	70		Pull 16 Fm 125.0' to 130.0' Run 5.0' Rec 3.5' C.L. 1.5'
	130		SM - Sand, gray, dense, argillaceous, with shell fragments, some clay layers.	20		Pull 17 Fm 130.0' to 135.0' Run 5.0' Rec 1.0' C.L. 4.0'
	135		-Limestone remnant at 130.0'			
-86.0	137.8		Sandy limestone, gray, dense, with sand pockets.	48		Pull 18 Fm 135.0' to 140.0' Run 5.0' Rec 2.4' C.L. 2.6'
-88.2	140		SM - Sand, gray, with loose coarse, shell fragments.	64		Pull 19 Fm 140.0' to 145.0' Run 5.0' Rec 2.4' C.L. 1.8'
-92.2	144		SM - Sand, gray, dense, argillaceous, with some clay layers.			
	145					
						
-98.2	150		-Small dense limestone layer from 148.8' to 149.3'.	100		Pull 20 Fm 145.0' to 150.0' Run 5.0' Rec 5.0'
			Bottom of Hole - 150.0 Ft.			

96

96

DRILLING LOG		DIVISION South Atlantic		INSTALLATION St. Stephens, SC		SHEET 1 OF 3 SHEETS	
1 PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 4x5 1/2 core bbrl. 6" fishtail			
2 LOCATION (Coordinate or Station) Sta. 598+60, 75.0' Left of Centerline				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME-75			
4 HOLE NO. (As shown on drawing title and file number) 54				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 0		DISTURBED UNDISTURBED	
5 NAME OF DRILLER T. W. Scott				14. TOTAL NUMBER CORE BOXES 6			
6 DIRECTION OF HOLE X VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 50.0		16. DATE HOLE STARTED 3-3-75 COMPLETED 3-5-75	
7 THICKNESS OF OVERBURDEN 77.1'				17. ELEVATION TOP OF HOLE 51.9			
8 DEPTH DRILLED INTO ROCK 39.9'				18. TOTAL CORE RECOVERY FOR BORING 94.2			
9 TOTAL DEPTH OF HOLE 117.0'				19. SIGNATURE OF INSPECTOR Charlie Canning and Charles M. Deaver			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
						Fishtail from 0.0' to 77.1'.	
						Scale Change 75.0	
						W = Waxes Sample	
						W.T. 50.0'	
						Date 3/3/75	
						Depth to water during drilling	
-25.2	77		Top of Rock = -25.2				
			Sandstone, calcareous, slightly argillaceous, hard, dense, well cemented.			Pull 1	
						77.1' to 80.1'	
						Run - 3.9'	
						Rec - 2.7'	
						C.L. - -0.3'	
-27.9	79.8		Highly broken zone with slickensides - 78.2 to 78.6	90			
			Sandstone, argillaceous highly indurated with some soft clay layers. Contains some shell fragments, slightly micaceous, light to dark gray.		Box 1	Pull 2	
						80.1' to 83.1'	
						Run - 3.0'	
						Rec - 2.6'	
						C.L. - 0.4	
	81			86.6		W-1	
						W-2	
	83					W-3	
						W-4	
					Box 2	Pull 3	
						83.1 to 84.5	
						Run - 1.4, Rec-1.9	
						Gain - 0.5	
-32.6	85		Shale (See Page 2)				
			CONTINUED ON SHEET 2				
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.				

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephens, SC		2		
				OF 3 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
-34.0	85.9		Shale, dark gray, dense, fissile bedded, slightly calcareous	94.7		Pull 4 84.5' to 86.4' Run 1.9, Rec - 1.8 C.L. - 0.1
-34.2	86.1					
	87		Sandstone, argillaceous, light gray, well cemented.	0.0	Box 2	Pull 5 86.4' to 88.1' Run 1.7, Rec 0.0 C.L. - 1.7
			Shale, dark gray, fissile bedded, dense, slightly calcareous.		W-5	
	89					Pull 6 88.1' to 91.1' Run 3.0, Rec 4.7 Gain 1.7
				156.6		
	91					
-40.0	91.9			100	Box 3	Pull 7 91.1' to 92.7' Run 1.6, Rec 1.6 C.L. 0.0
-40.1	92.0		Sandstone, green glauconitic		W-6	
	93		Shell limestone, light gray, hard, dense.			Pull 8 92.7' to 95.7' Run 3.0', Rec 2.8 C. L. 0.2
-41.5	93.4				W-7	
			Shell limestone, light gray, coquina, soft to moderately hard.	93.3		
	95		Soft zone - 93.4' to 94.5'		W-8	
			Soft zone 95.7' to 98.7'			
			Soft Zone-99.8' to 103.0'			
	97			93.3	Box 4	Pull 9 95.7' to 98.7' Run 3.0', Rec 2.8' C. L. 0.2
	99					Pull 10 98.7' to 101.7' Run 3.0', Rec 2.8' C.L. 0.2'
				93.3	W-9	
					W-10	
	101					
CONTINUED ON SHEET 3						

98

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		51.9		54		
PROJECT			INSTALLATION		SHEET	
Cooper River Rediversion			St. Stephens, SC		3	
					OF 3 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
					Box 4	Pull 11 101.7' to 104.7' Run 3.0' Rec 2.9' C. L. 0.1'
	103			96.6	W-11	
	105				W-12	Pull 12 104.7' to 108.0' Run 3.3' Rec 2.8' C.L. 0.5'
	107			84.8	Box 5	
	108.1				W-13	
-56.2	109		Sand, Gray, dense "SC" some zones of "SP" sand	86.6	W-14	Pull 13 108.0' to 111.0' Run 3.0' Rec 2.6' C. L. 0.4'
	111					
-59.1	111.5		Sand, gray, argillaceous, loose.			Pull 14 111.0' to 114.0' Run 3.0' Rec 1.6' C. L. 1.4'
-59.6	112.2		Sandstone, dense, well cemented.	53.3	Box 6	
-60.3	113		Sand, gray, argillaceous loose			
	113.3		Shell limestone, gray, hard, fossiliferous, "coquina".			Pull 15 114.0' to 117.0' Run 3.0' Rec 3.3 Gain 0.3
-61.4	115			110.0	W-15	
	117					
-65.1			BOTTOM OF HOLE - 65.1			

99


99

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 8 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 4x5" ID Splitspoon & 4x5" ID			
2. LOCATION (Coordinates or Station) Powerhouse Site Stat 598+60 75 Ft. Right				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME 75			
4. HOLE NO. (As shown on drawing title and file number) 55				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 15	
5. NAME OF DRILLER Scott				14. TOTAL NUMBER CORE BOXES		7	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		47.0	
7. THICKNESS OF OVERBURDEN 74.0'				16. DATE HOLE		STARTED 2 Feb 75	
8. DEPTH DRILLED INTO ROCK 43.5				17. ELEVATION TOP OF HOLE		49.0	
9. TOTAL DEPTH OF HOLE 117.5				18. TOTAL CORE RECOVERY FOR BORING		94 %	
				19. SIGNATURE OF INSPECTOR William E. Hancock, Geologist			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
48.0	1.0		SM - Black fine grain silty sand and organic silts.		J-1	W. T. 2.0' DATE 2-2-75 Depth to water during drilling	
	2		SC - Tan fine grain clayey sand		J-2	W. T. 2.0' 19 Water table reading 24 hrs. after hole completed.	
45.0	4		SP - White poorly sorted fine grain sand			Soil horizons & stratum approximately set from bit cuttings and split-spoon samples.	
	6				J-3	J = Jar Sample 40 W = Waxed Sample	
	8					LAB CLASSIFICATION ELEV. CLASS	
40.0	9.0		Blue green sand, laminated, fine grain, poorly sorted sands with consolidated fat clays - occasional very thin seams of peat - lignite material, some glauconite and phosphate grains			-60.1-(-59.1) SM	
	10				J-4	-61.9-(-60.1) SM 50	
	12						
CONTINUED ON SHEET 2							
NOTE: Soils field classified in accordance with the Unified Soil Classification System.							

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephens, SC		2		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, etc.)
a	b	c	d	e	f	g
			Blue green sands, laminated fine grain sands with consolidated fat clays.			
	14					
	16				J-5	100
	18					
	20				J-6	100
25.0	24		SC - tan, fine grain clayey sand			
	26			J-7	100	
22.0	27		Blue green sand laminated fine grain sand with fat clays. SP-5M			
	28					


CONTINUED ON SHEET 3

101

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 49.0		Hole No. 55		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, SC		SHEET 3 OF 8 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
			Blue green sands, laminated fine grain sands with consolidated fat clays. Occasional very thin seams of peat - lignite material. sands include glauconite and phosphate grains.			
30				J-8	35	
32						
34						
36				J-9	75	
38						
40					J-10	60
42						
44						

CONTINUED ON SHEET 4

102

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 49.0		Hole No. 55		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, SC		SHEET 4 OF 8 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water, etc. depth, weather, etc. if pertinent) g
			SM-CH- Bluegreen sands, laminated fine grain, poorly sorted, silty sands with consolidated fat clays. Occasional thin seams of peat- lignite material, glauco- nite and phosphate grains present in sands.		J-11	60
	46					
	48					
	50					
	52					
	54					
	56				X	136
	58					
	60					

CONTINUED ON SHEET 5

103

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

49.01

Hole No. 55

PROJECT

Cooper River Rediversion

St. Stephens, Mo.

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF SOILS

Pressure

Temp

Humidity

Wind

a

b



SM - Green, fine grain, glauconitic sand, little green

1.11

62

64

16.0

65

66

SP - Green fine grain, poorly sorted sand

1.11

68

21.0

70



SM - Green silt, sand with some clay

1.11

72

25.0

74

Top of Rock 74.00 Sandstone, heavily argillaceous, firm to hard, dated, contains leached fossiliferous

1.11

76

CONTINUED ON SHEET 6

104

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 55		
PROJECT		49.0		SHEET 6		
Cooper River Rediversion		INSTALLATION		FOR 8 SHEETS		
		St. Stephens, SC				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water used, etc.)
a	b	c	d	e	f	g
-27.5	76.5		Sandstone, dark green fine to medium grain, glauconitic moderately hard; well cemented with shell fragments, also animal burrows present.		W-3	Pull 2
-28.5	77.5				W-4	Fm 76.5' to 80.0'
	78				W-5	Run 3.5'
						Rec 3.5'
						CL = 0.0
				Box 1		
					W-6	
-31.0	80		Shale - "Claystone" blue-green, gradational sandy and silty initial- ly, massive, soft to moderately hard, with slight fissility.		W-7	Pull 3
						Fm 80.0' to 82.4'
						Run 2.4'
						Rec 2.4'
	82		Sandstone, blue-green, argillaceous sandstone moderately hard to soft, well compacted, loosely cemented, horizontal parting.		W-8	
						Pull 4
-34.6	83.6				W-9	Fm 82.4' to 84.7'
	84			Box 2		Run 2.3'
					W-10	Rec 2.3'
			Shale - "Claystone" Blue-green, consolidated soft, fissile, slakes when exposed to air, blocky, conchoidal fracture.			Pull 5
	86					Fm 84.7' to 90.0'
						Run 5.3'
						Rec 2.3'
	88				W-11	NOTE: Run ex- tended to inable core recovery due to malfunc- tion of catcher spring.
			88.9 - 89.0 Broken hackly fracture zone			
				Box 3		
-41.5	90.5		Limestone, grey to light "Coquina". (See Sheet 7)		W-12	Pull 6
						Fm 90.0' to 92.6'
						Run 3.6'
	92					Rec 3.6'

CONTINUED ON SHEET 7

105

CONTINUED ON SHEET 7

105

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		55	
PROJECT		INSTALLATION		SHEET		7	
Cooper River Rediversion		St. Stephens, SC		OF 8 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) k	
a	b	c	d	e	f	k	
			Limestone, "Coquina", grey to greenish cream, vuggy, inclusions of glauconitic sands, moderately hard, to hard, coarse, imbricate structure in a sandy matrix.		Box 3	Pull #6 Con't	
	94			100	Box 4	W-13	Pull 7 Fm 93.6' to 96.6' Run 3.0' Rec 3.0'
	96		96.6' - 97.2' soft rock zone.			W-14	
	98			90		W-15	Pull 8 Fm 96.6' to 98.6' Run 2.0' Rec 1.8' Loss 0-2
	100			100		W-16	Pull 9 Fm 98.6' to 101.6' Run 3.0' Rec 3.0'
	102		102.1' - 103.7' very hard sound rock, well cemented, large % of calcareous sands, arenaceous limestone		Box 5	W-17	
	104			100		W-18	Pull 10 Fm 101.6' to 103.7' Run 2.1' Rec 2.1'
	106					W-19	Pull 11 Fm 103.7' to 108.0' Run 4.3' Rec 4.3'
-58.0	107		Gradational lime rubble and sandstone	100	Box 6	W-20	
	108		Sandstone, green, argillaceous glauconitic soft rock, fine grain.				
CONTINUED ON SHEET 8							
106							

106





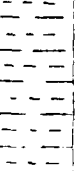


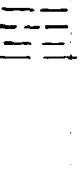

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		49.01		Hole No. 55	
PROJECT		INSTALLATION		SHEET 8		OF 8 SHEETS	
Cooper River Rediversion		St. Stephens, SC					
ELEVATION	DEPTH	LOG	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
			Sands, silty, green, glauconitic argillaceous, well compacted calcareous	MC 26.5% MC 27.8% 100	W-21 Box 6 W-22	Pull 12 Fm 108.0' to 111.7' Run 3.7' Rec 3.7'	
-62.7	111.7						
-63.0	112		Gradational contact argillaceous calcareous sandstone to limestone "coquina".		W-23	Pull 13 Fm 111.7' to 114.5' Run 2.8' Rec 2.1' Loss 0.7'	
			Limestone, "coquina", vuggy, well cemented, very hard sound rock, green, imbricate structur- ed shells in limey sand matrix, lime rubble shell- stone, calcrudite.	75	Box 7 W-24		
-66.1	115.1		Sands, green, fine grain, shelly, soft, consolidated calcareous silts, marl.	100	W-25 W-26	Pull 14 Fm 114.5' to 117.5' Run 3.0' Rec 3.0'	
-67.3	116.3		Limestone, Coquina		W-27		
-68.5	117.5		Sands, green				
	118		Bottom of Hole 117.5'				

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DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 6 SHEETS	
1. PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 4x5 1/2 Dennison Bbl; 1 3/8"		11. DATUM FOR ELEVATION SHOWN (FROM or MSL) 10 Splitspoon	
2. LOCATION (Coordinates or Station) Stat. 598+60; 140' Rt. of C			12. MANUFACTURER'S DESIGNATION OF DRILL CME 75		13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN	
3. DRILLING AGENCY Savannah District			14. TOTAL NUMBER CORE BOXES 7		15. ELEVATION GROUND WATER +48.1' MSL Artesian	
4. HOLE NO. (As shown on drawing title and file number) 56			16. DATE HOLE 12 Feb 75		17. ELEVATION TOP OF HOLE 48.1'	
5. NAME OF DRILLER Scott, T. W.			18. TOTAL CORE RECOVERY FOR BORING 98		19. SIGNATURE OF INSPECTOR W. E. Hancock	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG FROM VERT.			17. ELEVATION TOP OF HOLE 48.1'		18. TOTAL CORE RECOVERY FOR BORING 98	
7. THICKNESS OF OVERBURDEN 74.0'			19. SIGNATURE OF INSPECTOR W. E. Hancock			
8. DEPTH DRILLED INTO ROCK 44.6'						
9. TOTAL DEPTH OF HOLE 118.6						
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
45.6	2.5	SM Black to tan, silty sand fine grain subangular, Qtz. Saturated, firm, uniform			J-1	W.T. 0.5'
	5	GC Tan, Clayey coarse grain sand and pea gravel. Angular gravel, dense.			J-2	Date 12 Feb 75 Depth to water during drilling
	10	Blue grey, sand, very fine to fine poorly sorted with interbedded silty clay. Sand layers are dense and the clay layers are stiff to firm.			J-3	W.T. +2.0' Water table reading 48 hrs. after hole completed.
	15	SM, CL, SP			J-4	hole cased to -26'
	20				J-5	J = Jar Sample W = Waxed Sample D = Denison Sample
	25				J-6	Borehole advanced with 6-inch fishtail bit, supported with drilling mud; cuttings continuously examined and samples retrieved with 1 3/8" ID.
	30					Splitspoon at 5 foot intervals
CONTINUED ON SHEET 2						
NOTE: Soils field classified in accordance with the Unified Soil Classification System.						

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 48.1'	Hole No. 56		
PROJECT Cooper River Rediversion Powerhouse Site			INSTALLATION St. Stephens, S.C.		SHEET 2 OF 6 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		Green, clayey, glauconitic, sand, carbonate-quartz grains, coarse, with shell fragments.		J-7	
	40		SP - Dark grey, sand, fine grain with laminations of silty clay, CL. Sands are dense and clay laminae are stiff. Occasional laminae of peat, "lignite" occurs in the samples.		J-8	
	45				J-9	
	50				J-10	
	55		SC - Grey to dark green, coarse, glauconitic, sand, some shell frags., interbedded with clay, green, fat, stiff, "CH".		J-11	
	60				J-12	
	65		-66.0 - 70.0 silty glauconitic sand		J-13	
	70				J-14	
			CONTINUED ON SHEET 3			

109

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 48.1'		Hole No. 56			
PROJECT Cooper River Rediversion Powerhouse Site		INSTALLATION St. Stephens, S. C.		SHEET 3 OF 6 SHEETS			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			Dark green clay, fat stiff		15	J-15	Note change scale at 70.0'
-23.9	72		Grey, green clayey sand, contains some glauconite and shell fragments, very dense.				
-25.9	74		Sandstone, grey, argillaceous, calcareous, containing shell fragments, hard well-cemented, borderline clayey sandstone or sandy claystone.	100		W-1	Pull 1 74.0' to 74.7' Run 0.7' Rec 0.7'
-27.5	75.6 76		Shale - Dark blue grey to black. Sandy shale, soft consolidated displaying some fissility. Contains numerous load casts of sand, as well as minor amount of shell fragments.			W-2	Pull 2 74.7' to 77.7' Run 3.0' Rec 3.0'
	78		77.7 to 80.7' soft to very soft arenaceous material.	100		W-2	Pull 3 77.7' to 80.7' Run 3.0' Rec 3.0'
	80		81.7 - 82.5' sandstone seam			W-3	Pull 4 80.7' to 83.7' Run 3.0' Rec 3.0'
	82		83.7' - Displays massive bedding.	100 MC 30.0%			
	84		84.5' - fissility well developed along mica segregation planes.	100		W-4	Pull 5 83.7' to 84.5' Run 0.8' Rec 0.8'
	86		CONTINUED ON SHEET 4				

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110

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 48.1'		Hole No. 56		SHEET 5 OF 6 SHEETS	
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, S. C.					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERED	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
			Limestone, grey	100		W-9	Pull 10 Continued
			Sand, grey to brown, calcareous grey, marl. Loose.			W-10	Pull 11 101.6' to 104.6' Run 3.0' Rec 3.0'
103			Limestone, grey, "Coquina" mod. hard, vuggy, sound rock.	100	Box 5		
104						W-11	
-56.4	104.6		Sand, creamy grey, calcareous fine grain			W-12	Pull 12 104.9' to 107.6' Run 3.0' Rec 3.0'
-56.9	105						
-57.9	106		Limestone "Coquina" - creamy grey, moderately hard	100		W-13	
-59.1	107.2		Sandstone, creamy grey, calcareous, well cemented, moderately hard.				
108			Sand, green glauconitic fine grain, argillaceous quartz sand, subangular dense.	78.7	Box 6	W-14	Pull 13 107.6' to 110.9' Run 3.3' Rec 2.6' Loss 0.7'
109							
110							
111							
112				100		B-15	Pull 14 110.9' to 112.3' Run 1.4' Rec 1.4'
-64.4	112.5		Limestone "Coquina", creamy grey, shell rubble cemented in a sand-calcareous matrix, hard, grades to borderline. Sandy limestone to a calcareous sandstone.	100		W-16	Pull 15 112.3' to 114.8' Run 2.5' Rec 2.5'
113							
114							
-66.7	114.8				Box 7		
115			Sand, silty sand, green calcareous	100		W-17	Pull 16 114.8' to 117.3' Run 2.5' Rec 2.5'
116						W-18	
117			CONTINUED ON SHEET 6				

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112

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
48.1'


Hole No. 56

Cooper River Rediversion

St. Stephens, S.C.

SHEET 6

OF 6 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc., if significant)
			SM. sand, silty sand, green calcareous	100		Scale change at 117
-69.9	118		Sandstone, argillaceous	100	Box 7	Pull 17 117.3' to 118.6' Run 1.3' Rec 1.3'
-70.5	118.6		Bottom of hole 118.6'			
	119					

Hole No. 57

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 10 SHEETS	
1 PROJECT		South Atlantic		St. Stephen, S.C.			
2 LOCATION (Coordinates or Station)		Sta. 599+35		10. SIZE AND TYPE OF BIT 4x5 1/2" Core Bbl			
3 DRILLING AGENCY		Savannah District		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)		MSL	
4 HOLE NO (As shown on drawing title and file number)		57		12 MANUFACTURER'S DESIGNATION OF DRILL		CME-75	
5 NAME OF DRILLER		T. W. Scott		13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		15 - Bag 21 - Jar	
6 DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14 TOTAL NUMBER CORE BOXES		10	
7 THICKNESS OF OVERBURDEN		75.0'		15 ELEVATION GROUND WATER		+50.3	
8 DEPTH DRILLED INTO ROCK		75.5'		16 DATE HOLE		STARTED 3-10-75 COMPLETED 3-21-75	
9 TOTAL DEPTH OF HOLE		150.5'		17 ELEVATION TOP OF HOLE		+50.3'	
				18 TOTAL CORE RECOVERY FOR BORING		84%	
				19 SIGNATURE OF INSPECTOR		Charles Beaver Geologist	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
48.3	2		FILL MATERIAL (Dry compacted fill used to support drill rig)			J = Jar Sample B = Bag Sample W = Waxed Sample	
	4		CL - Tan Silty Clay, with some organic material	100	B-1	Auger=2.0 to 12.0 Pull 1 2.0 to 6.0 Run 4.0' Rec 4.0'	
43.8	6.5		CH - Dark Gray Clay, with Sand (SF) Pockets.	100	J-1		
	8				B-2	Pull 2 6.0' to 11.0' Run 5.0' Rec 5.0'	
	10					LAB CLASSIFICATION	
	11			MC 18.4%	I-2	ELEV. CLASSIFI. 39.3-48.3 SM 39.5-44.3 SM 15.0-17.8 SM -6.2-(-17.1) SP-SM -14.8-(-22.0) SM -10.7-(-14.2) SC	
CONTINUED ON SHEET 2							
NOTE: Soils field classified in accordance with the Unified Soil Classification System.							

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
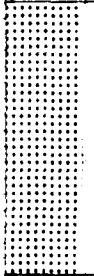

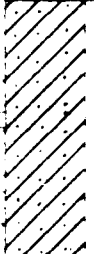
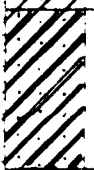
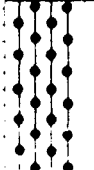

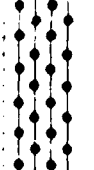


DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
+50.3'

Hole No. 57

Lower River Rediversion

INSTALLATION
St. Stephens, S. C.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE BOX OR RECOVER SAMPLE ERY MC	REMARKS Dip, time, etc.
	11.8		CH - dark gray clay with sand pockets	11.9% 100	B-3 Pull 3, 11.0' to 12.0' Run 1.0' Rec 1.0'
	13		SP - Gray Sand, Non-cemented	0.0	J-3  4 x 5 1/2 12.0' to 14.5' Pull 4 12.0' to 15.0' Run 3.0' Rec 0.0' CL. 3.0'
35.1	15.2		CL - Gray Silty Clay with Sand (SM) Lenses	100	B-4 Pull 5 15.0' to 18.0' Run 3.0' Rec 3.0'
	17				J-4
31.8	18.5		CH - Gray clay, plastic, with Sand (SM) Seams.	100	B-5 Pull 6 18.0' to 21.0' Run 3.0' Rec 3.0'
29.8	20				J-5
	20.5		Sm - Grey, silty sand, with clay layers. Dense material	0.0	Fishtail
	23			100	B-6 Pull 7 22.0' to 25.0' Run 3.0' Rec 3.0'
	25			100	J-6 Pull 8 25.0' to 26.5' Run 1.5' Rec 1.5'
27					J-7 See sheet 3

CONTINUED ON SHEET 3

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +50.3'		Hole No. 57		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephens, S. C.		SHEET 3 OF 10 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	29		SM- gray silty sand with clay layers	100	B-7	Pull 9 26.5' to 29.5' Run 3.0' Rec 3.0'
	31				J-8	
	31				B-8	Pull 10 29.5' to 32.5' Run 3.0' Rec 3.0'
17.3	33		CH - Gray Clay, Calcareous, Loose Shells.	MC 47.3% 100	B-9	Pull 11 32.5' to 35.5' Run 3.0' Rec 3.0'
15.3	35				J-10	
	37		SP - Dark Gray Sand, Saturated, Micaceous, contains some silty sand laminae "SM"	MC 77.0% 100	B-10	Pull 12 35.5' to 38.5' Run 3.0' Rec 3.0'
	39				J-11	
	41					0.0
	43			0.0	J-12	Penetration 41.5'
					X	Pull 14 41.5' to 43.5' Run 2.0' Rec 0.0' CL 2.0'

CONTINUED ON SHEET 4

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CONTINUED ON SHEET 4

116

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+50.3'

Hole No. 57

Sheet 4

Upper River Rediversion

INSTALLATION

SE. Stephens, S. C.

REMARKS

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS

% CORE
RECOVERY

BOX OR
SAMPLE
NO

(Drilling time, hours, and minutes
see Remarks column for details)

b

a

d

e

f

g

SP - Dark Gray, Sand
Micaceous, water saturated,
contains some silt-sand
laminae "SM"

0.0

See Sheet 3

45

0.0

Pull 15
43.5' to 46.0'
Run 2.5'
Rec 0.0'
CL 2.5'

47

0.0

Pull 16
46.0' to 48.5'
Run 2.5'
Rec 0.0'
CL 2.5'

49

0.0

Pull 17
48.5' to 51.0'
Run 2.5'
Rec 0.0'
CL 2.5'

51

Blows

3" to 3.0'
Spoon
140 = Hammer
Drive 1
51.0' to 53.2'

53

B-13

60

100

Drive 2
53.2' to 55.0'

55

J-14

Drive 3
55.0' to 55.8'

100

57

B-12

J-16

Drive 4
55.8' to 57.8'

50

100

Drive 5
57.8' to 59.8'

20

59

CONTINUED ON SHEET 5

117

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+50.3'

Hole No. 57

SHEET 5

OF 10 SHEETS

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephens, S. C.

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

(Description)

% CORE

RECOV

ERY

BOX OF

SAMPLE

NO.

REMARKS

See Sheet 4

3- J-17 4 x 5 60.0'

12 J-18 Drive 6 100'

Pull 18

60.0' to 61.5'

Run 1.5'

Rec 1.5'

Pull 19

61.5' to 64.5'

Run 3.0'

Rec 3.0'

3-20

Pull 20

64.5' to 67.5'

Run 3.0'

Rec 3.0'

-14

J-21

Pull 21

67.5' to 70.5'

Run 3.0'

Rec 0.0'

CL 3.0'

Pull 22

70.5' to 73.5'

Run 3.0'

Rec 3.0'

B-15

J-22

Pull 23

73.5' to 75.0'

Run 1.5'

Rec 1.5'

-24.7

75

Top of rock 75.0'

CONT. OF SHEET 6

118

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +50.3'		Hole No. 57	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephens, S. C.		SHEET 6 OF 10 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	75.6		Gray Sandstone, Dense, Calcareous	100		Pull 24 75.0' to 78.0' Run 3.0' Rec 3.0'
			Gray Sandstone, Gray Shale, Intermittant, Dense			
	77		Dark Gray Shale, Dense, Micaceous, Slightly Calcareous, Fissile Bedded.	87	Box 1	W-1 Pull 25 78.0' to 81.0' Run 3.0' Rec 2.6' CL 0.4'
	79					
	81			93		Pull 26 81.0' to 84.0' Run 3.0' Rec 2.8' CL 0.2'
	83					
	85			40	Box 2	W-2 Pull 27 84.0' to 87.0' Run 3.0' Rec 1.2' CL 1.8'
	87					
			WAX-3 Blended classifies as MH	MC 60.0%		W-3 Pull 28 87.0' to 90.0' Run 3.0' Rec 5.0' CG 2.0'
	89		WAX-4 Blended classifies as MH-CH	167 MC 64.0%	Box 3	
	90				W-4	
CONTINUED ON SHEET 7						

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +50.3'		Hole No. 57	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephens, S. C.		SHEET 7 OF 10 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
40.3	90.6		Shale, dark grey, continued	20		Pull 29 90.0' to 93.0' Run 3.0' Rec 0.6' CL 2.4'
			Gray Limestone, Dense, Argillaceous, Fossiliferous			
40.7	92		Gray Limestone, Argilla- ceous, Soft, with Loose Shells			
			Gray Limestone, Dense, Fossiliferous			
43.7	94		Gray Limestone, soft, Argillaceous, loose shells	93	Box 3	W-5 Pull 30 93.0' to 96.0' Run 3.0' Rec 2.8' CL 0.2'
			Gray Limestone, hard, Fossiliferous			
45.7	96			123		Pull 31 96.0' to 99.0' Run 3.0' Rec 3.7' CG 0.7'
	98					
	100			100	Box 4	W-6 Pull 32 99.0' to 102.0' Run 3.0' Rec 3.0'
	102					
	104			100	W-7 Pull 33 102.0' to 105.0' Run 3.0' Rec 3.0'	
	106					
				100	Box 5	Pull 34 105.0' to 108.0', Run 3.0' Rec 3.0'
			CONTINUED ON SHEET 8			





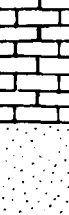

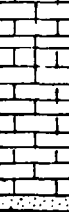
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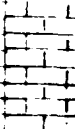

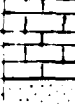



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PROJECT		ELEVATION TOP OF HOLE		Hole No.		
Cooper River Rediversion		+50.3'		57		
INSTALLATION		SHEET 8		OF 10 SHEETS		
St. Stephens, S.C.						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc., if applicable)
a	b	c	d	e	f	g
	106.7		Limestone, hard, continued			Pull 34 Con't
			SM - Gray Sand, Dense, Shell Fragments, Calcareous, Micaceous	100	W-8	
	108				Box 5	Pull 35 108.0' to 111.0' Run 3.0' Rec 3.5' CG 0.5'
	110			116	W-9	
61.7	112		Gray Limestone, Dense, Fossiliferous, well consolidated	93		Pull 36 111.0' to 115.0' Run 4.0' Rec 3.7' CL 0.3'
	114				Box 6	W-10
64.4	114.7		Gray Sand, Argillaceous, Calcareous			
65.3	115.6		Gray Limestone, Dense, Fossiliferous	83	W-11	Pull 37 115.0' to 118.0' Run 3.0' Rec 2.5' CL 0.5'
	117.1		SM - Gray Sand, Shell Fragments, Calcareous			
	118				W-12	Pull 38 118.0' to 121.0' Run 3.0' Rec 3.0'
			Limestone Seam - 119.3' to 119.7	100		
	120		SM - Gray Sand, Shell Fragments, Calcareous		Box 7	
			Limestone Seam - 120.4' to 120.8			
			SM - Gray Sand, Shell Fragments, Calcareous	83		Pull 39 121.0' to 124.0' Run 3.0'
122			CONTINUED ON SHEET 9			

121

124

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +50.3'		Hole No. 57		
PROJECT Cooper River Rediversion			INSTALLATION St. Stephens, S. C.		SHEET 9 OF 10 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
			SM- Gray sand, shell fragments, calcareous	83		Pull 39 (con'd) Rec 2.5' CL 0.5'
124						
124.8			Gray Sandy Limestone, Dense, Fossiliferous	77	Box 7	Pull 40 126.0' to 127.0' Run 1.0' Rec 2.3' CL 0.7'
126						
			Gray Shell Limestone, Low Consolidation, soft, some sand lenses.	123		Pull 41 127.0' to 130.0' Run 3.0' Rec 3.7' CG 0.7'
128						
130						
			Dense Calcareous Sandstone	97	Box 8	Pull 42 130.0' to 133.0' Run 3.0' Rec 2.9' CL 0.7'
132						
			Shell Limestone, Gray, Low Consolidation, soft, some sand lenses.	47		Pull 43 133.0' to 136.0' Run 3.0' Rec 1.4' CL 1.6'
134						
			Sandstone, Dense Calcareous			
136						
			Shell Limestone, gray Low Consolidation, soft, some sand lenses.	110	Box 9	Pull 44 136.0' to 139.0' Run 3.0' Rec 3.3' CG 0.3'
138						
CONTINUED ON SHEET 10						
						122

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		+50.3'		57		
PROJECT		INSTALLATION		SHEET 10		
Cooper River Rediversion		St. Stephens, S. C.		OF 10 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth, etc. if significant)
a	b	c	d	e	f	g
			Shell Limestone, gray, soft	110		Pull 44 See Sheet 9
	140		Sandstone, Dense Calcareous			Pull 45 139.0' to 142.0' Run 3.0' Rec 3.0'
			Shell Limestone, Gray, low consolidation, soft, some sand lenses.	100	Box 9	
	142		Sandstone, Dense Calcareous			Pull 46 142.0' to 145.0' Run 3.0' Rec 1.7' CL 1.3'
			Shell Limestone, Gray, low consolidation, soft, some sand lenses.	57		
-93.7	144		SC - Sand, gray fine, dense, argillaceous, micaceous.			Pull 47 145.0' to 147.5' Run 2.5' Rec 3.5' CG 1.0'
	146			140		
	148				Box 10	Pull 48 147.5' to 150.5' Run 3.0' Rec 3.5' CG 0.5'
				116		
-100.2	150				W-16 W-17	
			Bottom of Hole - 150.5'			
	152					

123

123

Hole No. 58

DRILLING LOG		DIVISION South Atlantic		INSTALLATION St. Stephens, SC		SHEET 1 OF 8 SHEETS	
1 PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" 1D Splitspoon & 4x5 1/2" Core Bbl			
2 LOCATION (Coordinates or Station) Stat 599 + 35 75.0 Ft. Left of Centerline				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3 DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME 75			
4 HOLE NO. (As shown on drawing title and file number) 58				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 24 SS 31 Waxed			
5 NAME OF DRILLER T. W. Scott				14. TOTAL NUMBER CORE BOXES 11			
6 DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG FROM VERT.				15. ELEVATION GROUND WATER 48.0'			
7 THICKNESS OF OVERBURDEN 73.5'				16 DATE HOLE STARTED 20 Feb 75 COMPLETED 23 Feb 75			
8 DEPTH DRILLED INTO ROCK 77.9'				17. ELEVATION TOP OF HOLE 48.0'			
9 TOTAL DEPTH OF HOLE 151.41				18 TOTAL CORE RECOVERY FOR BORING 93 %			
				19 SIGNATURE OF INSPECTOR William F. Hancock, Geologist			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	Blow 0
46.0	2.0		SC - Sand, Clayey, Tan Fine Grain		J-1	W.T. Surface	8
	5.0		CP - Gravel with Tan Fine Grain poorly sorted sand and pebbles.		J-2	DATE 20 Feb 75 Depth to water during drilling	40
38.5	9.5		Sand, dark green to grey, fine grain, interbedded with laminae of clay, silty to fat. Also contains some lignite in the sand layers		J-3	W.T. Artesian	6
	10				J-4	Water Table reading 24 hrs. after hole completed 7 gpm flow	40
	15				J-5	J = Jar Sample	57
	20				J-6	W = Waxed Sample	15
	25				J-7	13/8" 1D Splitspoon at 3 foot intervals	60
					J-8		60
					J-9		56
							39

CONTINUED ON SHEET 2



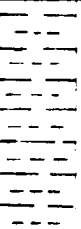

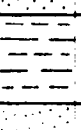

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

124

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		48.0'		58		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		St. Stephens, SC		OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
25.5	25.5		Sand laminated with fat clay			BLOWS
			SC - Sand, green clayey, com- posed of glauconite- carbonate and quartz grains with some shell fragments		J-10	12
	30				J-11	16
14.0	34.0		Sand, "SP" green, fine grain, glauconitic inter- bedded with silty clay and silt containing peat.		J-12	20
	35				J-13	90
	40				J-14	100/.9
6.0	42.0		SM - Sand, kelley green, silty glauconitic, very fine grain		J-15	15
	45				J-16	16
	49.5				J-17	17
-1.5	50		Sand, "SP" green, fine grain interbedded with clay, dark green, "CH".		J-18	100/.4
	55				J-19	100/.7
	60				J-20	50
-13.5	61.5		SM - Sand, silty green glauconitic		J-21	100/.2
	64.5				J-22	96
-16.5	65					
CONTINUED ON SHEET 3						
125						

CONTINUED ON SHEET 3

125

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		48.0'		58		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephens, SC		3		
				OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OF SAMPLE NO	REMARKS (Drilling time, water loss, depth of lost string, etc. if significant)
a	b	c	d	e	f	g
			SC - Sand, clayey, green, glauconitic, containing some shell fragments			
	70				J-23	100/.2
						100/.2
	72					Scale change at 70.0'
-25.5	73.5		TOP OF ROCK 73.5			4 x 5 1/2 at 73.5
	74		Sandstone - blue grey silicified carbonate, fossil- iferous hard, well cemented fine grain.	100		P-1, 73.5 to 75.7 Run 2.1 Rec. 2.1
-26.6	74.6		Shale, black to dark grey, consolidated, displays some fissility, contains load casts of sand and sandy seams, contains shell frag- ments.		W-1	
	76				Box 1 W-2	P-2 Fm 75.7 to 79.7 Run 4.0 Rec. 4.0 difficulty with core spring extend- ed run
	78			100	W-3	
32.0	80		Sandstone, dark grey, silicified hard, fine grain			P-3 Fm 79.4 to 82.4 Run 2.7 Rec. 2.7
-32.9	80.9		Shale, black to dark grey, sandy, soft, consolidated, massive, with sand load casts, calcarrous.	100	W-4	
-34.0	82				Box 2 W-5	P-4 82.4 to 84.2 Run 1.8 Rec. 1.8
-35.2	83.2		Sandstone, dark grey, silicified, fine grain hard.	100		
	84		CONTINUED ON SHEET 4			

126

126

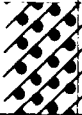




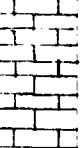
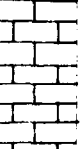

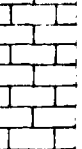


DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
		48.0'		58		
INSTALLATION		SHEET		4		
Cooper River Rediversion		St. Stephens, SC		1 of 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
-36.6	84.6		Shale, black to dark grey - fissile, soft. Conchoidal fracture.			P-5 84.2 to 88.0 Run 3.8 Rec 3.8
-37.0	85		Sandstone, grey, fine grain argillaceous hard.		Box 2	
	86		Shale, black to dark grey.	100		W-6
			Shale, Black homogenous, fissility well developed.			
	88					
-41.9	89.9					P-6 Fm 88.0 to 92.0 Run 4.0 Rec 4.0
	90		0.2' Glauconite zone	100	Box 3	Core spring diffi- culty extended run 1.0' to fissilitate recovery
			Limestone "coquina", creamy grey, fossil, ferons, shell fragments slightly imbricate, with- in a glauconite-carbonate- quartz sand matrix. Rock moderately hard.			W-8
	92					W-9
			93.8' oblique fracture on a glauconite sand zone	100		P-7 Fm 92.0 to 93.8 Run 1.8 Rec 1.8
	94		93.8-96.8 rock varies from soft to moderately hard with varying percent of sand.	90	Box 4	P-8 Fm 93.8 to 96.8 Run 3.0' Rec 2.7' Loss 0.3'
	96					
			96.8-101.5 rock is broken along sand rich zone.			
	98			81		P-9 Fm 96.8 to 101.5 Run 4.7 Rec 3.8 Loss 0.9
	100					
			CONTINUED ON SHEET 5			
127						

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephens, SC		5		
				OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Include time water to depth of weathering, etc. if significant)
					Box 4	P-9 Fm 96.8 to 101.5 Run 4.7, Rec 3.8 Loss 0.9
	102		Hard massive rock	81		
			Limestone, "Coquina"		W-11	P-10 Fm 101.5 to 105.0 Run 3.5 Rec 3.5
			- Hard, massive	100	Box 5	W-12
	104					
					W-13	
-57.0	105		Sandstone, green-grey, poorly consolidated, calcareous soft, glauconitic, shelly, 105.8 becomes well cemented, hard.	100	W-14	P-11 Fm 105.0 to 106.4 Run 1.4 Rec 1.4
	106					
	106.4					
-58.4			SM - Sand, green, fine grain, calcareous, argilla- ceous, slightly glauconitic.	100	W-15	P-12 Fm 106.4 to 111.0 Run 4.6 Rec 4.6
	108				W-16	
				MC 27.5%	Box 6	LAB CLASSIFICATION ELEV. CLASSIFI -59.4-(-58.4) SM
	110					
			Limestone, "Coquina", creamy grey, vuggy, moderately hard, well cemented.			P-13 Fm 111.0 to 114.0 Run 3.0 Rec 3.0
-63.4	111.4				W-17	
	112			100		
-66.0	114		SM- Sand, green, glauconitic, fine grain.			P-14 Fm 114.0 to 117.0 Run 3.0 Rec 3.0
-66.3	114.3		Limestone, "Coquina"		W-18	
			moderately hard.	100	Box 7	
-67.2	115.2				W-19	
	116		CONTINUED ON SHEET 6			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		48.01		Hole No.		58	
Cooper River Rediversion		INSTALLATION		St. Stephens, SC		SHEET		6	
						OF		8 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering etc. if significant)			
			SC - Sand, green clayey heavily glauconitic, cal- careous, shell fragments, soft, loose.	100		W-19	P-14	See Sheet 5	
-69.4	117.4		Limestone, "Coquina" hard				P-15, 117.0 to 120.0	Run 3.0	
-70.0	118		SC - Sand, green, heavily glauconitic, contains shell fragments, soft, loose.	100	Box 7	W-20	Rec 3.0		
-72.0	120		Limestone "Coquina"				P-16	Fm 120' to 122.2'	
-72.4	120.4		SC - Sand, green glauconitic, contains shell fragments.	100		W-21	Run 2.2'	Rec 2.2'	
-74.0	122		Limestone, "Coquina" vuggy, broken, grey. Soft to moderately hard.	100			P-17	Fm 122.2' to 124.4'	
	124		124.2 - 128.0 - soft zone containing 1/4 inch seams of claystone.		Box 8		Run 2.2	Rec 2.2	
	126			50			P-18	Fm 124.4 to 129.4	
	128		-128.0' - 128.8' Soft Zone			W-22	Run 5.0	Rec 2.5	
	130			50			Loss 2.5'	Core blocked in- side bbrl. Ex- perienced core loss most probably within this region	
-84.0	132		Sand				P-19	Fm 129.4 to 132.4	
			CONTINUED ON SHEET 7						
129									

CONTINUED ON SHEET 7

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DRILLING LOG (Cont Sheet)

Hole No. 58

Cooper River Rediversion

St. Stephens, SC

REMARKS

ELEVATION	DEPTH	LEGEND	CORE SAMPLE	REMARKS
		SW- Sand, green, soft, loam	50	See Sheet 6
132.4				135.4
134		Limestone, flagstone, sand sound rock	100	Run 3.0
			Box 10	Rec 3.0
136.4				138.4
138.4				
138.4		SW- Sand, green, loam, calcareous, fine grain. Fines with depth	100	P-22
140				Fm 138.4 to 141.4
			Box 10	Run 3.0
142				W-27
				Rec 3.0
144			Box 10	P-23
				Fm 141.4' to 146.4'
146			W-28	Run 5.0'
				Rec 5.0'
148			Box 11	P-24
				Fm 146.4 to 151.4
				Run 5.0'
				Rec 5.0'

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

48.0'

Hole No. 58

PROJECT


Cooper River Rediversion

INSTALLATION

St. Stephens, SC











SHEET 8

OF 8 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth, weathering, etc. at depth)
a	b		d	c	e	f
	150		SM-sand, gray, loose, glauconitic.	100	Box 11 W-31	P-24, 146.4 to 151.4 Run 50 Rec 5.0
-103.4			Bottom of Hole 151.4			
	152					

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DRILLING LOG		LOCATION	INSTALLATION	CHIEF
South Atlantic		St. Stephen's	1	8
1. NAME OF VESSEL		2. DATE AND TYPE OF LOG		
3. NAME OF COMMANDER		4. DATE OF ELEVATION MEASUREMENT		
5. NAME OF SURVEYOR		6. DATE OF SURVEY		
7. NAME OF ASSISTANT SURVEYOR		8. DATE OF ASSISTANT SURVEY		
9. NAME OF OBSERVER		10. DATE OF OBSERVATION		
11. NAME OF RECORDER		12. DATE OF RECORDING		
13. NAME OF CHECKER		14. DATE OF CHECKING		
15. NAME OF APPROVER		16. DATE OF APPROVAL		
17. NAME OF REVIEWER		18. DATE OF REVIEW		
19. NAME OF FINAL APPROVER		20. DATE OF FINAL APPROVAL		
21. NAME OF DISTRIBUTOR		22. DATE OF DISTRIBUTION		
23. NAME OF ARCHIVER		24. DATE OF ARCHIVING		
25. NAME OF RELEASER		26. DATE OF RELEASING		
27. NAME OF DESTROYER		28. DATE OF DESTROYING		
29. NAME OF PRESERVER		30. DATE OF PRESERVING		
31. NAME OF RESTORER		32. DATE OF RESTORING		
33. NAME OF REPRODUCER		34. DATE OF REPRODUCING		
35. NAME OF TRANSMITTER		36. DATE OF TRANSMITTING		
37. NAME OF RECEIVER		38. DATE OF RECEIVING		
39. NAME OF ANALYST		40. DATE OF ANALYZING		
41. NAME OF INTERPRETER		42. DATE OF INTERPRETING		
43. NAME OF REPORTER		44. DATE OF REPORTING		
45. NAME OF DISTRIBUTOR		46. DATE OF DISTRIBUTING		
47. NAME OF ARCHIVER		48. DATE OF ARCHIVING		
49. NAME OF RELEASER		50. DATE OF RELEASING		
51. NAME OF DESTROYER		52. DATE OF DESTROYING		
53. NAME OF PRESERVER		54. DATE OF PRESERVING		
55. NAME OF RESTORER		56. DATE OF RESTORING		
57. NAME OF REPRODUCER		58. DATE OF REPRODUCING		
59. NAME OF TRANSMITTER		60. DATE OF TRANSMITTING		
61. NAME OF RECEIVER		62. DATE OF RECEIVING		
63. NAME OF ANALYST		64. DATE OF ANALYZING		
65. NAME OF INTERPRETER		66. DATE OF INTERPRETING		
67. NAME OF REPORTER		68. DATE OF REPORTING		
69. NAME OF DISTRIBUTOR		70. DATE OF DISTRIBUTING		
71. NAME OF ARCHIVER		72. DATE OF ARCHIVING		
73. NAME OF RELEASER		74. DATE OF RELEASING		
75. NAME OF DESTROYER		76. DATE OF DESTROYING		
77. NAME OF PRESERVER		78. DATE OF PRESERVING		
79. NAME OF RESTORER		80. DATE OF RESTORING		
81. NAME OF REPRODUCER		82. DATE OF REPRODUCING		
83. NAME OF TRANSMITTER		84. DATE OF TRANSMITTING		
85. NAME OF RECEIVER		86. DATE OF RECEIVING		
87. NAME OF ANALYST		88. DATE OF ANALYZING		
89. NAME OF INTERPRETER		90. DATE OF INTERPRETING		
91. NAME OF REPORTER		92. DATE OF REPORTING		
93. NAME OF DISTRIBUTOR		94. DATE OF DISTRIBUTING		
95. NAME OF ARCHIVER		96. DATE OF ARCHIVING		
97. NAME OF RELEASER		98. DATE OF RELEASING		
99. NAME OF DESTROYER		100. DATE OF DESTROYING		
101. NAME OF PRESERVER		102. DATE OF PRESERVING		
103. NAME OF RESTORER		104. DATE OF RESTORING		
105. NAME OF REPRODUCER		106. DATE OF REPRODUCING		
107. NAME OF TRANSMITTER		108. DATE OF TRANSMITTING		
109. NAME OF RECEIVER		110. DATE OF RECEIVING		
111. NAME OF ANALYST		112. DATE OF ANALYZING		
113. NAME OF INTERPRETER		114. DATE OF INTERPRETING		
115. NAME OF REPORTER		116. DATE OF REPORTING		
117. NAME OF DISTRIBUTOR		118. DATE OF DISTRIBUTING		
119. NAME OF ARCHIVER		120. DATE OF ARCHIVING		
121. NAME OF RELEASER		122. DATE OF RELEASING		
123. NAME OF DESTROYER		124. DATE OF DESTROYING		
125. NAME OF PRESERVER		126. DATE OF PRESERVING		
127. NAME OF RESTORER		128. DATE OF RESTORING		
129. NAME OF REPRODUCER		130. DATE OF REPRODUCING		
131. NAME OF TRANSMITTER		132. DATE OF TRANSMITTING		
133. NAME OF RECEIVER		134. DATE OF RECEIVING		
135. NAME OF ANALYST		136. DATE OF ANALYZING		
137. NAME OF INTERPRETER		138. DATE OF INTERPRETING		
139. NAME OF REPORTER		140. DATE OF REPORTING		
141. NAME OF DISTRIBUTOR		142. DATE OF DISTRIBUTING		
143. NAME OF ARCHIVER		144. DATE OF ARCHIVING		
145. NAME OF RELEASER		146. DATE OF RELEASING		
147. NAME OF DESTROYER		148. DATE OF DESTROYING		
149. NAME OF PRESERVER		150. DATE OF PRESERVING		
151. NAME OF RESTORER		152. DATE OF RESTORING		
153. NAME OF REPRODUCER		154. DATE OF REPRODUCING		
155. NAME OF TRANSMITTER		156. DATE OF TRANSMITTING		
157. NAME OF RECEIVER		158. DATE OF RECEIVING		
159. NAME OF ANALYST		160. DATE OF ANALYZING		
161. NAME OF INTERPRETER		162. DATE OF INTERPRETING		
163. NAME OF REPORTER		164. DATE OF REPORTING		
165. NAME OF DISTRIBUTOR		166. DATE OF DISTRIBUTING		
167. NAME OF ARCHIVER		168. DATE OF ARCHIVING		
169. NAME OF RELEASER		170. DATE OF RELEASING		
171. NAME OF DESTROYER		172. DATE OF DESTROYING		
173. NAME OF PRESERVER		174. DATE OF PRESERVING		
175. NAME OF RESTORER		176. DATE OF RESTORING		
177. NAME OF REPRODUCER		178. DATE OF REPRODUCING		
179. NAME OF TRANSMITTER		180. DATE OF TRANSMITTING		
181. NAME OF RECEIVER		182. DATE OF RECEIVING		
183. NAME OF ANALYST		184. DATE OF ANALYZING		
185. NAME OF INTERPRETER		186. DATE OF INTERPRETING		
187. NAME OF REPORTER		188. DATE OF REPORTING		
189. NAME OF DISTRIBUTOR		190. DATE OF DISTRIBUTING		
191. NAME OF ARCHIVER		192. DATE OF ARCHIVING		
193. NAME OF RELEASER				

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 47.9'		Hole No. 59		
PROJECT Cooper River Rediversion Powerhouse		INSTALLATION St. Stephen, S.C.		SHEET 108		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS g <i>(Drilling time, water level, depth, weather, etc., if applicable)</i>
			Sands grade to medium and coarse grain		J-6	100/.6'
	30				J-7	
	35					6 inch PVC casing set into top of rock, grouted & redrilled with 4x5 1/2" core BBr1 to 151.'
	40				J-8	89
	45				J-9	80
45.8	45.8				J-10	95
	50		SM - Sand, green, fine grain, silty, dense.		J-11	100/.8
	55		CH - Clay, fat, with occasional shell fragments, stiff.		J-12	98
57.1	60		SM - Sand, silty, green glauconitic		J-13	73
57.1	65					58

CONTINUED ON SHEET 3

133

CONTINUED ON SHEET 3

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
47.9'

Hole No. 59

SHEET 3

OF 8 SHEETS

PROJECT

Cooper River Rediversion Powerhouse St. Stephens, SC

INSTALLATION

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

TO CORE BOX FOR
RECORD AND
PRESERVATION

REMARKS

A B



SC- Sand, green, clayey, micaceous, carbonaceous, shell fragments.

1007.3

Depth of sand at 73.5' level.

73.5



MP - micaceous, fine-grained, sandy, calcareous.

73.5

MP - micaceous, fine-grained, sandy, calcareous. Fossils, sand, well-sorted.

73.5' to 75.5'
Rim 2.0'
Rec 1.0'
Cl 0.5'

75.5



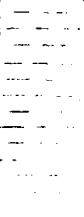
Shale, grey to black, soft, consolidated, displays some fissility, contains load casts of argillaceous sand, as well as occasional shells. Calcareous. (Shale highly broken upon extraction from core Bbr1)

Box

100

75.5' to 78.5'
Rim 3.0'
Rec 1.0'

78

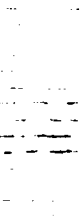


Shale, grey to black, soft, consolidated, displays some fissility, contains load casts of argillaceous sand, as well as occasional shells. Calcareous. (Shale highly broken upon extraction from core Bbr1)

100

78.5' to 81.5'
Rim 3.0'
Rec 1.0'

81.5

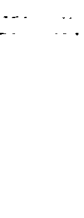


Shale, grey to black, soft, consolidated, displays some fissility, contains load casts of argillaceous sand, as well as occasional shells. Calcareous. (Shale highly broken upon extraction from core Bbr1)

100

81.5' to 84.5'
Rim 3.0'
Rec 1.0'

84.5



Shale, grey to black, soft, consolidated, displays some fissility, contains load casts of argillaceous sand, as well as occasional shells. Calcareous. (Shale highly broken upon extraction from core Bbr1)

100

84.5' to 87.5'

134

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
47.9'

Hole No. 59

PROJECT

Cooper River Rediversion Powerhouse

INSTALLATION

St. Stephens, SC

SHEET 4

OF 8 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, etc. as applicable)
	b	c	d	e	f	g
-37.4	85.3		Blended sample classifies as (MH)	MC 50.0%	W-1	Pull 5 Core run extended to allow for re- covery of sands
	86			100	Box 2	Fm 83.6' to 88.4' Run 4.8' Rec 4.8'
	88		SM. Salt and pepper sands, fine to coarse grain with shell fragments.		W-2	
-40.5	88.4					
	90		Limestone, "Coquina", cream grey, hard massive sand, silt matrix, well cemented.	100	Box 3	Pull 6 Fm 88.4' to 91.9' Run 3.5' Rec 3.5'
	92					
	94		Vuggy, moderately hard but broken.	100		Pull 7 Fm 91.9' to 94.4' Run 2.5' Rec 2.5'
	96			100	Box 4	Pull 8 Fm 94.4' to 97.5' Run 3.1' Rec 3.1'
	98		Broken into small fragments along sandy soft zones	100		Pull 9 Fm 97.5' to 100.1' Run 2.6' Rec 2.6'
	100					

CONTINUED ON SHEET 5

135

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

47.9'

Hole No. 59

PROJECT

Cooper River Rediversion Powerhouse

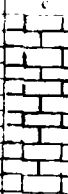

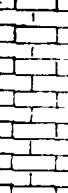


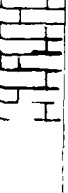
INSTALLATION

St. Stephens, SC

SHEET 5

OF 8 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS Description d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS g (Drilling time, water loss, depth of weathering, etc. if significant)
			Limestone, "Coquina"		W-4	Pull 10 Fm 101.1' to 103.0' Run 2.9' Rec 2.9'
	102			100		
					Box 5	Pull 11 Fm 103.0' to 106.0' Run 3' Rec 3'
	104		Mudstone - somewhat broken around voids	100		
-56.1	106		SM - sand, greenish gray, slightly clayey, fine grain, dense.			Pull 12 Fm 106.0' to 110.5' Run 4.5' Rec 4.5'
	108			100		
	110					
	112			50	Box 6	Pull 13 Fm 110.5' to 113.5' Run 3' Rec 1.5'
-65.3	113.7					
	114		Limestone, Gray "Coquina", moderately hard, somewhat broken.	75		Pull 14 Fm 113.5' to 115.5' Run 2.0' Rec 1.5'
	116			90		Pull 15
CONTINUED ON SHEET 6						136


DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion Powershouse, St. Stephens, SC				6		
				OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
118			Limestone-"Coquina" moderately hard	90	BOX 6	Pull #15 115.5' to 118.8' Run 3.3' Rec 3.0' CL 0.3'
118						
120			Sandstone-Grey, glauconitic shelley, soft to moderately hard			Pull #16 118.8' to 123.5' Run 4.7' Rec 3.5' CL 1.2'
122						
122			Limestone-Grey, hard "Coquina" Contains 2" peat seam	75		Run extended to enable recovery core wouldn't stay in barrel upon pulling.
124						
124				92	BOX 7	Pull #17 123.5' to 126.0' Run 2.5' Rec 2.3' CL 0.2'
126						
126			126.0' -128.5' Badly broken, loosly cemented, friable, mostly shells and coarse sand.	92		Pull #18 126.0' to 128.5' Run 2.5' Rec 2.3' CL 0.2'
128						
130			Limestone-Grey, sandy, interlayered loose quartz coarse grain sand with cemented shell fragments.	45	BOX 8	Pull #19 128.5' to 132.5' Run 4.0' Rec 1.8' CL 2.2'
132						
			Continued on Sheet #7			

139


DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 59		
PROJECT		INSTALLATION		SHEET 7 OF 8 SHEETS		
Cooper River Rediversion Powerhouse		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
132			Continued from Sheet #6	45		Pull #19 Continued
			Limestone-Grey, hard, sandy with fossiliferous	80		Pull #20 132.5' to 135.0' Run 2.5' Rec 2.0' CL 0.5'
134					BOX 8	
			Sands-Green, very clayey, glauconitic. Sand in part grades to silt, Dense	100	W-8	Pull #21 135.0' to 137.5' Run 2.5' Rec 2.0' CL 0.5'
136						
				100		Pull #22 137.5' to 140.0' Run 2.5' Rec 2.5'
138						
				100		Pull #23 140.0' to 142.5' Run 2.5' Rec 2.5'
140					BOX 9	
				100		Pull #24 142.5' to 145.0' Run 2.5' Rec 2.5'
142						
				100		Pull #25 145.0' to 147.5' Run 2.5' Rec 2.5'
144						
				100		
146					BOX 10	
				87		
148			Continued on Sheet #8			

138

138

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 47.9'		Hole No. 59	
PROJECT			INSTALLATION		SHEET 8	
Cooper River Rediversion Powerhouse			St. Stephen, S.C.		OF 8 SHEETS	
ELEVATION a	DEPTH	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
	148		Sands-Green, vary clayey. glauconitic. Sand in part grades to silt. Dense	74.3	BOX 10	Pull #26 147.5' to 151.0' Run 3.5' Rec 2.6' CL 0.9'
	150					
-103.1	151.0					
			BOTTOM OF HOLE 151.0'			

139

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 73.8		Hole No. 60			
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, South Carolina		SHEET 2 OF 3 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	30 ^b		SC- Sand, Silty, Fine, W/Thin Clay Layers and Gravel		J-11 B-11		
					J-12 B-12		
	35			*	J-13 B-13		
				MC 66.7%			
	40				J-14 B-14		
					J-15 B-15		
	45				J-16 B-16		
					J-17 B-17		
	50				J-18 B-18		
					J-19 B-19		
	55				J-20 B-20		
				B-20A B-20B	M.C. 11.1% 50%	J-21 B-21	
	60				J-22 B-22		
	65				J-23 B-23		
			J-24 B-24				
	70	CONTINUED ON SHEET #3					

*NATURAL WATER CONTENT OF CLAY PORTION


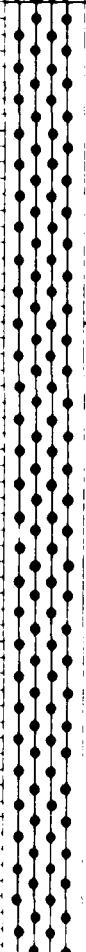
141

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 60		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, South Carolina		3		
OF 3 SHEETS						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER- ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	70b					
					J-25 B-25	
	75				J-26 B-26	
			SC- Sand, Silty to Fine, Interbedded with Clay Layers		J-27 B-27	
	80				J-28 B-28	
					J-29 B-29	
	85				J-30 B-30	
					J-31 B-31	
	90				J-32 B-32	
					J-33 B-33	
	95				B-34	
			Top of Rock 98.0'			
			Shale- Dark Gray, Hard			
	100					
BOTTOM OF HOLE 100.0'						

142

Hole No. 61

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 6 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.	10. SIZE AND TYPE OF BIT 4" Square Auger & 4x5" Core		
2. LOCATION (Coordinates or Station) Sta. 595+00, 500' Right of Centerline			MSL	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) bbl		
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL CME-75			
4. HOLE NO. (As shown on drawing title and file number) 61			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 38	UNDISTURBED 2	
5. NAME OF DRILLER T.W. Scott			14. TOTAL NUMBER CORE BOXES	1		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG FROM VERT.			15. ELEVATION GROUND WATER	+46.3		
7. THICKNESS OF OVERBURDEN 86.0'			16. DATE HOLE	STARTED 3/27/75	COMPLETED 4-1-75	
8. DEPTH DRILLED INTO ROCK 4.6'			17. ELEVATION TOP OF HOLE	55.3		
9. TOTAL DEPTH OF HOLE 90.6'			18. TOTAL CORE RECOVERY FOR BORING 19. SIGNATURE OF INSPECTOR Charles M. Deaver	7		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SM-Tan. fine sand		J-1	Pull #1 0.0' to 3.0' Run 3.0' Rec 3.0'
			SC-Tan and Red. sandy clay	100	B-1	J=Jar Sample B=Bag Sample W=Waxed Sample
				MC 17.3% 100	B-2	Pull #2 3.0' to 6.0' Run 3.0' Rec 3.0'
					J-3	LAB CLASSIFICATION Sample ELEV. Class B-2 49.3-52.3 SC B-5 38.3-43.3 MH B-7 23.3-31.3 SM
				100	B-3	Pull #3 6.0' to 9.0' Run 3.0' Rec 3.0'
			SC-Tan and Red. clayey sand		J-4	LAB CLASSIFICATION Sample ELEV. Classif B-9 9.3-13.3 SM B-12 -6.3-(-14.3) SP-SM B-14 -24.3-(-29.3) SM
				100	B-4	Pull #4 9.0' to 12.0' Run 3.0' Rec 3.0'
			Continued on Sheet #2			9.0'
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.			Date 3-27-75 Depth next to cutting drilling 143

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 55.3		Hole No. 61		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 2 OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
12	12		SC-Tan and Red, clayey sand			Pull #5 12.0' to 17.0' Run 5.0' Rec 5.0'
14	14		Contains some gravel below 14.0'	MC 45.2% 100	B-5 J-6	
16	16		SM-Tan and Red sand, with clay pockets, some gravel		J-7	
18	18		SM-Dark gray sand, dense, Argillaceous, with clay layers throughout, slightly micaceous	100	B-6 J-8 J-9	Pull #6 17.0' to 21.0' Run 4.0' Rec 4.0'
20	20					
22	22					
24	24			0		Pull #7 21.0' to 24.0' Run 3.0' Rec 0.0' CL 3.0'
26	26			MC 36.2% 100	J-10 B-7	Pull #8 24.0' to 27.0' Run 3.0' Rec 3.0'
28	28					Pull #9 Continued

Continued on Sheet #3

144

DRILLING LOG (Cont Sheet)

ELEVATION OF SURFACE

55.3

Hole No. 51

Cooper River Rediversion

St. Stephen, S.C.

DATE OF LOG

CLASSIFICATION OF MATERIAL

LOG SHEET NO.

MAP

28'

SM-Dark gray sand, dense, Argillaceous, with clay layers throughout, slightly micaceous

Pull #9
27.0' to 30.0'
Run 3.0' Rec 0.0'
CL 3.0'

30'

Pull #10
30.0' to 33.0'
Run 3.0' Rec 0.0'
CL 3.0'

32'

Pull #11
33.0' to 36.0'
Run 3.0' Rec 0.0'

34'

Pull #12
36.0' to 39.0'
Run 3.0' Rec 2.0'
CL 1.0'

36'

SM-Dark gray sand, dense, Argillaceous, with shell fragments, slightly calcareous

B-8

38'

J-11

Pull #13
39.0' to 42.0'
Run 3.0' Rec 2.0'
CL 1.0'

40'

-12

Contains some gravel to 42.0'

Pull #14
42.0' to 46.0'
Run 4.0' Rec 3.0'
CL 1.0'

42'

75

B-9

Continued on Sheet 114

145

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 55.3		Hole No. 61		
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
44.6			SM-Dark gray sand, dense, Argillaceous, with shell fragments, slightly calcareous		B-9	Pull #14 Continued
46					J-13	
48			SM-Dark gray sand, dense, saturated, non-cemented, slightly micaceous (Slumps on withdrawal)	100	B-10	Pull #15 46.0' to 49.0' Run 3.0' Rec 3.0'
50				0	J-14	
52						Pull #16 49.0' to 52.0' Run 3.0' Rec 0.0' CL 3.0'
54				0		Pull #17 52.0' to 55.0' Run 3.0' Rec 0.0' CL 0.0'
56				100	J-15	Drive-3" ID Splitspoon Blows 100/0.6'
58				66	B-11	Pull #18 55.6' to 58.6' Run 3.0' Rec 2.0' CL 1.0'
60					J-16	
						Pull #19 Continued
			Continued on Sheet #5			

146

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 55.3		Hole No. 1		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS Logging time, etc.
	60h		SM-Sand, dark gray, dense saturated, non-cemented, slightly micaceous. (Slumps on withdrawal)	66	B-11	Pull #19 58.6' to 61.6' Run 3.0' Rec 2.0' CL 1.0'
	62			100		Pull #20 61.6' to 64.6' Run 3.0' Rec 3.0'
	64			J-18		
	66			B-12	Pull #21 64.6' to 69.6' Run 5.0' Rec 5.0'	
	68			100		
	70			J-19		
	72			60	B-13	
	74					
	76					

Continued on Sheet #6




147

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 61		
PROJECT		INSTALLATION		SHEET 6		
Cooper River Rediversion		St. Stephen, S.C.		OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-76 ^b			SM-Dark gray sand, dense, saturated, non-cemented, slightly micaceous (Slumps on withdrawal)			Pull #23 74.6' to 79.6' Run 5.0' Rec 3.0' CL 2.0'
	78			60	B-13	
					J-20	
	80					Pull #24 79.6' to 84.6' Run 5.0' Rec 5.0'
-25.7			SM-Dark gray sand, dense, silty, with shell fragments, micaceous			
	82			100	B-14	
					J-21	
	84					Pull #25 84.6' to 87.6' Run 3.0' Rec 3.0'
			TOP OF ROCK 86.0'		J-22 B-15	
-30.7	86		Sandstone-Gray, hard, dense, slightly calcareous.	100		
					W-1	
-31.9			Shale-Dark gray, slightly calcareous and less consolidated to 88.3'		J-23	Pull #26 87.6' to 90.6' Run 3.0' Rec 2.8' CL 0.2'
	88		Hard below 88.3' and fissile bedded.	93	BOX 1	
					W-2	
	90					
-35.3	90.6		BOTTOM OF HOLE 90.6'			
						BLOWS PER FOOT: Number required to drive 1 1/8" ID split spoon w/140 lb hammer falling 30".
						148

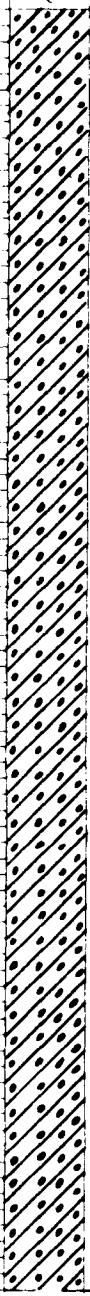
148

Hole No. 62

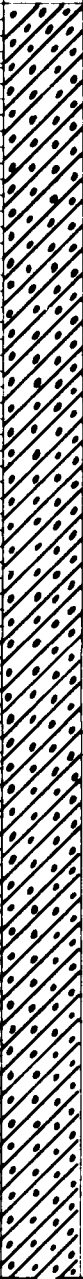
DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 6 SHEETS	
1. PROJECT		South Atlantic		St. Stephen, S.C.			
2. LOCATION (Coordinates or Station)		Station E 595+00 300' Left		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 5"		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Square Auger	
3. DRILLING AGENCY		Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL		Failing 314	
4. HOLE NO. (As shown on drawing title and file number)		62		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 18 UNDISTURBED	
5. NAME OF DRILLER		C. Parden		14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		54.4	
7. THICKNESS OF OVERBURDEN		92.2'		16. DATE HOLE		STARTED 21 March 75 COMPLETED 25 March 75	
8. DEPTH DRILLED INTO ROCK		5.3'		17. ELEVATION TOP OF HOLE		68.6	
9. TOTAL DEPTH OF HOLE		97.5'		18. TOTAL CORE RECOVERY FOR BORING		83 %	
				19. SIGNATURE OF INSPECTOR		C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
64.3	5		CL-Red and tan, silty clay		J-1	W.T. 17.0'	
			ML-Red and tan, silty clay		J-2	Date 21 March 75 Depth to water during drilling	
59.1	10		CH-Pink and tan, fat clay		J-3	W.T. 14.2' Water table reading 24 hrs. after hole completed.	
54.6	15		SC-Tan and red, clayey fine sand		J-4	J-Jar sample	
	20				J-5	5" Square auger 0.0' to 15.0' 20 Splitspoon 15.0' to 31.5' 21 4x5 1/2" Barrel 31.5' to 97.5' 21	
43.1	25		Sand-Tan, silty fine sand with interbedded thin clay lenses		J-6	24 26 70 78 38	
	30					Scale Change at 30.0' 35	
			Continued on Sheet #2			BLOWS PER FOOT:	
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.			Number required to drive 12" sp. spoon w/140 lb. force failing 30". 149	

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 68.6		Hole No. 62		
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.			SHEET 2 OF 6 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	30 b		Sand- with interbedded thin clay layers.				4x5½ @ 31.5' 100/0.9'
	32						Pull #1 31.5' to 34.5' Run 3.0' Rec 2.4' CL 0.6'
35.9	32.7						
35.5	33.1		Sandstone layer 32.7' to 33.1'	80	BOX 1		
	34		Sand-dark gray, fine grain interbedded with clay layers.				Pull #2 34.5' to 37.5' Run 3.0' Rec 1.3' CL 1.7'
	36					43.3	J-8
	38			76.7		Pull #3 37.5' to 40.5' Run 3.0' Rec 2.3' CL 0.7'	
	40						
	42			66.7	J-9	Pull #4 40.5' to 43.5' Run 3.0' Rec 2.0' CL 1.0'	
	44			117	BOX 2	Pull #5 43.5' to 46.5' Run 3.0' Rec 3.5' CG 0.5'	
	46						
Continued on Sheet #3							
150							

150

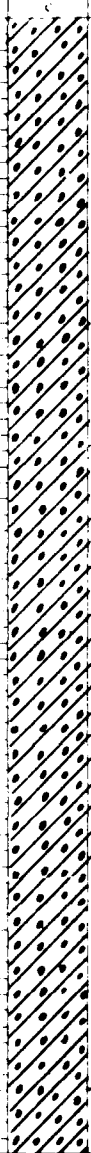
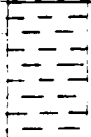

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 68.6	Hole No. 62		
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.	SHEET 3 OF 6 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	46		Sand-Dark gray, fine grain interbedded with clay layers.	117		J-10 Pull #5 Continued
	48			100	BOX 2	Pull #6 46.5' to 49.5' Run 3.0' Rec 3.0'
	50			66.7	J-11	Pull #7 49.5' to 52.5' Run 3.0' Rec 2.0' CL 1.0'
	52					
	54			66.7	BOX 3	Pull #8 52.5' to 55.5' Run 3.0' Rec 2.0' CL 1.0'
	56					
	58			123	J-12	Pull #9 55.5' to 58.5' Run 3.0' Rec 3.7' CG 0.7'
	60			100	BOX 4	Pull #10 58.5' to 61.5' Run 3.0' Rec 3.0'
	62			100	J-13	Pull #11 Continued
				Continued on Sheet #4		

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 68.6		Hole No. 62		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 4 OF 6 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	62		Sand-Dark gray, fine grained interbedded with clay layers.	100	BOX 4	Pull #11 61.5' to 64.5' Run 3.0' Rec 3.0'
	64					
	66			100	J-14	Pull #12 64.5' to 67.5' Run 3.0' Rec 3.0'
	68			73.3		Pull #13 67.5' to 70.5' Run 3.0' Rec 2.2' CL 0.8'
	70					
	72			100	J-15	Pull #14 70.5' to 73.5' Run 3.0' Rec 3.0'
	74			100	BOX 6	Pull #15 73.5' to 76.5' Run 3.0' Rec 3.0'
	76			J-16		
	78			100		Pull #16 76.5' to 79.5' Run 3.0' Rec 3.0'

Continued on Sheet #5

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	Hole No. 62		
PROJECT			INSTALLATION			SHEET 5 OF 6 SHEETS
Cooper River Rediversion			St. Stephen, S.C.			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	78 h		Sand-Dark gray, fine grain, interbedded with clay layers.	100	BOX 6	Pull #16 Continued
	80			100	J-17	Pull #17 79.5' to 82.5' Run 3.0' Rec 3.0'
	82					
	84			100		Pull #18 82.5' to 85.5' Run 3.0' Rec 3.0'
	86				J-18	
	88		Shale-Dark gray, Medium hard, with some sandstone layers.	53.3		Pull #19 85.5' to 88.5' Run 3.0' Rec 1.6' CL 1.4'
	90			0.0		Pull #20 88.5' to 91.5' Run 3.0' Rec 0.0' CL 3.0'
	92				BOX 8	
-23.6			Shell Fragments TOP OF ROCK 92.2'	80.0		Pull #21 91.5' to 94.5' Run 3.0' Rec 2.4' CL 0.6'
	94		Continued on Sheet #6			


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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 62		
PROJECT		INSTALLATION		SHEET 6 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.9	94b		Shale-Dark gray, medium hard, contains some sandstone layers	80	BOX 8 W-1	Pull #21
	96					Pull #22 94.5' to 97.5' Run 3.0' Rec 2.4' CL 0.6'
	98					
			BOTTOM OF HOLE 97.5'			

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Hole No. 63

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 6 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 4" Square Auger, 6" Fishtail			
2. LOCATION (Coordinates or Station) Sta. 594+80, 250' Right of Centerline				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL 4x5" Core BBL 1 3/8" ID Split-spoon			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME-75			
4. HOLE NO. (As shown on drawing title and file number) 63				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 17			
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES 3			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 48.2			
7. THICKNESS OF OVERBURDEN 82.1'				16. DATE HOLE STARTED 8 May 75 COMPLETED 9 May 75			
8. DEPTH DRILLED INTO ROCK 2.9'				17. ELEVATION TOP OF HOLE 50.2			
9. TOTAL DEPTH OF HOLE 85.0'				18. TOTAL CORE RECOVERY FOR BORING 64 %			
				19. SIGNATURE OF INSPECTOR Charles M. Deaver			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
47.7	2		SM-Sand, tan, fine		J-1	4" Square Auger J=Jar Sample	
	4		SM-Tan, sand, some clay pockets, wet		J-2	W.T. 2.0' Date 8 May 75 Depth to water during drilling	
	6				J-3	Fishtail	
42.2	8		SC-Tan and red, sandy clay, medium to fine sand			Splitspoon at 10.0'	
	10				J-4	Blows 28	
	12					Fishtail	
Continued on Sheet #2							
NOTE: Soils field classified in accordance with the Unified Soil Classification System.				BLOWS PER FOOT Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30". 155			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 50.2		Hole No. 63		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 2 OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS <i>(Drilling time, water loss, depth of weathering, etc., if significant)</i>
37.2	12		SC-Tan and red, sandy clay, medium to fine sand			Fishtail
	14		SM-Gray, sand, with interbedded clay-CL layers, dense			
	16			J-5		74
	18					Fishtail
	20			J-6		108
	22					Fishtail
	24					
	26			J-7		140
	28					Fishtail

Continued on Sheet #3

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 63		
PROJECT		INSTALLATION		SHEET 3		
Cooper River Rediversion		St. Stephen, S.C.		OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth of weathering, etc. if available)
	28'		SM-Gray, sand, dense, with interbedded clay-CL layers		JAR	Fishtail
	30				J-8	
	32					38
10.2	34					
			SM-Gray, sand, dense, fine, slightly micaceous			Fishtail
	36				J-9	19
	38					
	40				J-10	
	42					47
	44					
Continued on Sheet #4						

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 63		
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
44b			SM-Gray, sand, dense, fine, slightly argillaceous micaceous		JAR	BOX R Blows
	46				J-11	140/1.0
	48					
	50				J-12	100
	52			100		4x5 1/2" Core Barrel at 50.4' Pull #1 50.0' to 55.0' Run 5.0' Rec 5.0'
	54				J-13	1
	56					Pull #2 55.0' to 60.0' Run 5.0' Rec 2.4' CL 2.6'
	58			48		
	60				J-14	

Continued on Sheet #5

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 63		
PROJECT		INSTALLATION		SHEET 5		
Cooper River Rediversion		St. Stephen, S.C.		LOG SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., at each interval)
44	44		SM-Gray, sand, dense, fine, slightly micaceous		JAR BOX	Pull #3 60.0' to 65.0' Run 5.0' Rec 4.0' CL 1.0'
46				80		
48						
50						Pull #4 65.0' to 70.0' Run 5.0' Rec 4.0' CL 3.0'
52				40		
54					2	
56				0		Pull #5 70.0' to 75.0' Run 5.0' Rec 0.0' CL 5.0'
58						
60						

Continued on Sheet #5

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

50.2

Hole No. 63

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 6

OF 6 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
76.0			SM-Gray, sand, dense, fine, slightly micaceous		JAR BOX	Pull #6 75.0' to 80.0' Run 5.0' Rec 5.0'
	78			100		
	80					
-30.3			SC-Gray, clayey sand, medium to fine sand		3	Pull #7 80.0' to 85.0' Run 5.0' Rec 4.0' CL 1.0'
					J-17	
-31.9	82		TOP OF ROCK 82.1'			
-32.3			Sandston-Gray, dense, hard, micaceous	80		
			Shale-Dark gray, dense, argillaceous, micaceous			
	84					
-34.4	85					
BOTTOM OF HOLE 85.0'						

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Hole No. 64

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 1 SHEETS	
1 PROJECT Cooper River Rediversion		South Atlantic		St. Stephen, S.C.		10 SIZE AND TYPE OF BIT 4" Square Auger 3.4x5.5" Core	
2 LOCATION (Coordinates or Station) Sta. -597+10, Centerline				11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		Bbl	
3 DRILLING AGENCY Savannah District				12 MANUFACTURER'S DESIGNATION OF DRILL CME-45			
4 HOLE NO. (As shown on drawing title and file number) 64				13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 21		13 DISTURBED BODIES UNDISTURBED 1	
5 NAME OF DRILLER T.W. Scott				14 TOTAL NUMBER CORE BOXES 1			
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT				15 ELEVATION GROUND WATER 53.1			
7 THICKNESS OF OVERBURDEN 81.0'				16 DATE HOLE STARTED 4-9-75 COMPLETED 4-15-75			
8 DEPTH DRILLED INTO ROCK 4.6'				17 ELEVATION TOP OF HOLE 54.1			
9 TOTAL DEPTH OF HOLE 85.6'				18 TOTAL CORE RECOVERY FOR BORING 88 %			
				19 SIGNATURE OF INSPECTOR Charles M. [Signature]			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	0		SM-Sand, tan, fine, moist			1	Pull #1 0.0' to 3.0' Run 3.0' Rec 3.0' LAB CLASSIFICATION SPT. ELEV. Class B-2 47.1-50.1 SM B-4 40.1-43.1 SC B-6 29.1-32.1 SM B-354 40.1-47.1 SC
	2			100	1		
	4			100	2	2	Pull #2 3.0' to 6.0' Run 3.0' Rec 3.0' LAB CLASSIFICATION SPT. ELEV. CLASS. B-9810 17.1-23.1 ML B-11 14.1-17.1 ML B-13514 4.1-10.1 SM
	6			MC 100		3	Pull #3 6.0' to 7.0' Run 1.0' Rec 1.0'
47.6			SC-Sand, tan, clayey, grades to a sandy clay				Pull #4 7.0' to 10.0' Run 3.0' Rec 3.0' LAB CLASSIFICATION SPT. ELEV. CLASS. B-14 1.1-7.1 SM B-15 1.1-4.1 SP-SM B-27 1.1-4.1 SP-SM
	8		Some gravel below 8.0'	MC 17.3%	3		
	10			100		4	Pull #5 10.0' to 13.0' Run 3.0' Rec 3.0'
	12			MC 44.4 100	4		
	14						
	16						
	18						
	20						
	22						
	24						
	26						
	28						
	30						
	32						
	34						
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	88						
	90						
	92						
	94						
	96						
	98						
	100						

Continued on Sheet #2
NOTE: Soils field classified
in accordance with the Unified
Soil Classification System.

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Water required to drive
4" ID spiltspoon w/140 lbs
hammer falling 30".

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.1		Hole No. 64			
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen S.C.		SHEET 2 OF 6 SHEETS			
ELEVATION a	DEPTH 12 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			SC-Sand, Red and tan, clayey sand, fine, dense	4	5	Pull #5	
	14			0	No Spl.	Pull #6 13.0' to 16.0' Run 3.0' Rec 0.0' CL 0.0'	
	16					Drive #1 3" ID Splitspoon 16.0' to 17.7' Blows 63-(16.0' to 17.0') 100-(17.0' to	
	18				5	17.7') Pull #7 17.7' to 21.0' Run 3.3' Rec 3.3'	
34.1	20				100	7	
			Sand-Dark gray, dense, Argillaceous, with clay layers, slightly micaceous			Pull #8 21.0' to 24.0' Run 3.0' Rec 3.0'	
	22						
	24			MC 45.5%	6		
	26			100	7		Pull #9 24.0' to 27.0' Run 3.0' Rec 3.0'
	28				6		Pull #10 Continued

Continued on Sheet #3



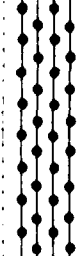
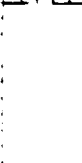
162

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, S.C.		3		
				OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	28 h		Sand, dark gray, dense, Argillaceous, with clay layers, slightly micaceous	100	8	Pull #10 27.0' to 30.0' Run 3.0' Rec 3.0'
30				9	Pull #11 30.0' to 33.0' Run 3.0' Rec 3.0'	
32				100	9	
34				MC 19.6%	10	Pull #12 33.0' to 36.0' Run 3.0' Rec 3.0'
36					10	
38				100	11	Pull #13 36.0' to 39.0' Run 3.0' Rec 3.0'
40				MC 41.0%	11	Pull #14 39.0' to 43.0' Run 4.0' Rec 4.0'
42				100	12	
44				13	Pull #15 Continued	

Clay % decreases below 42.0'

Continued on Sheet #4

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 64	
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS	
Cooper River Rediversion		St. Stephen, S.C.			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Designation</i>	* CORE LOSS OR RECOVERED SAMPLE PERCENT	REMARKS <i>During time water level defined otherwise state if not defined</i>
44.0			Sand-Dark gray, dense, Argillaceous, with clay layers, slightly micaceous	100	JAR
				MC	Pull #15 43.0' to 46.0' Run 3.0' Rec 3.0'
46				20.5%	
					Pull #16 46.0' to 49.0' Run 3.0' Rec 3.0'
48				100	14
			Sand-Dark gray, dense, Argillaceous, with clay layers, slightly micaceous	MC	
				82.3%	
50					13
				83	15
52					
40.1			Sand-Dark gray, saturated, (SM) dense, micaceous	66	16
54					
					14
56				50	17
58			Black organic material below 57.0'		15
60				50	18
Continued on Sheet #5					

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.1		Hole No. 64		
PROJECT		INSTALLATION		SHEET 5 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
60.0			Sand-Dark gray, saturated, SM dense, with organic material (silty) below 57.0' to 62.0'	18	1	Pull #20 Continued
62			Lignite fragments at 61.0'	50	19	Pull #21 61.0' to 64.0' Run 3.0' Rec 1.5' CL 1.5'
64			Some clay pockets below 63.0'		17	Pull #22 64.0' to 67.0' Run 3.0' Rec 3.0'
66				100	20	
68			Contains some gravel below 68.0'. White to black. Quartz, well rounded.	100	21	Pull #23 67.0' to 72.0' Run 5.0' Rec 5.0'
70					18	
72						Pull #24 72.0' to 77.0' Run 5.0' Rec 5.0'
74				100	22	
76					19	

Continued on Sheet #6

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

54.1

Hole No. 64

PROJECT

Cooper River Rediversion

INSTRUMENT

St. Stephen

SHEET 6

OF 6 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE (BOX OR RECOVER SAMPLE PERCENTAGE)	REMARKS (Drilling time, water loss, depth of penetration, etc., if significant)
-25.9	76.6		Sand-Dark gray, dense, (SM) saturated, some clay pockets and Quartz gravels at various intervals below 68.0'	22	Pull #24 Continued
	78				Pull #25 77.0' to 82.0' Run 5.0' Rec 5.0'
			Sand-Dark gray, silty, with loose shell fragments, dense	23 20	
				100	
-25.9	80		CL- Dark gray, silty clay dense, micaceous, slightly calcareous	21	
-26.9			TOP OF ROCK 81.0'		
	82		Sandstone-Gray, hard, dense, Argillaceous		Pull #26 82.0' to 85.6' Run 3.6' Rec 3.6'
-28.5			Shale-Dense, dark gray, Argillaceous, micaceous	WAX 1	
	84		Sandstone seam at 83.6'	100 BOX 1	
-31.5	85.6		Sandstone-Hard, dense, Argillaceous		
			BOTTOM OF HOLE 85.6'		

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Hole No. 65

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 7 SHEETS	
1. PROJECT		South Atlantic		St. Stephen, S.C.			
2. LOCATION (Coordinates or Station)		St. 97+10, 400' Left of Centerline		10. SIZE AND TYPE OF BIT		4x5" Core Bit	
3. DRILLING AGENCY		Savannah District		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		MSL	
4. HOLE NO. (As shown on drawing title and file number)		65		12. MANUFACTURER'S DESIGNATION OF DRILL		CME-75	
5. NAME OF DRILLER		T.W. Scott		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 30 UNDISTURBED 2	
6. DIRECTION OF HOLE		X VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES		8	
7. THICKNESS OF OVERBURDEN		94.0'		15. ELEVATION GROUND WATER		53.1	
8. DEPTH DRILLED INTO ROCK		4.0'		16. DATE HOLE		STARTED 3-21-75 COMPLETED 3-24-75	
9. TOTAL DEPTH OF HOLE		98.0'		17. ELEVATION TOP OF HOLE		19.6	
				18. TOTAL CORE RECOVERY FOR BORING		86 %	
				19. SIGNATURE OF INSPECTOR		Charles M. Deaver	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
0	0	c	d			JAR	
1	0.0		SP-Sand, Tan, loose			1	Pulls of one foot intervals using 4" Square Auger for jar samples were taken from 0.0' to 28.0'.
2	0.0		CL-Tan and red, sandy clay			2	
3	0.0		Tan and red, silty clay			3	
4	0.0					4	
5	0.0					5	
6	0.0		ML-Sand, fine, silty, Tan to red	100			
7	0.0						
8	0.0						
9	0.0						
10	0.0						
11	0.0		CL-Tan and red, silty clay, banded				
12	0.0						

Continued on Sheet #2

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT: 167

Number required to drive 14" IL penetrometer w/140 lb. hammer falling 30".

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

70.0

Hole No. 65

SHEET 1
OF 7 SHEETS

PROJECT

Cooper River Rediversion

ST. 1

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL (Description)	REMARKS
a	12 b	c	d	e
	12		SI - Sand, tan, silty, wet	
	14			
	16			
	18		SC - Sand, tan, silty, clayey, wet	
	20		SM - Sand, tan, with some clay seams, wet	
	22		Some gravel below 22.0'	
	24			
	26		CL - Clay, silty, tan and red	
	28		Sand - Dark gray, dense with clay bands	
			Continued on Sheet 1-3	

9 BLOWS

10

11 29

12 32

13 70

14 53

15 34

16 106

168

DRILLING LOG (Cont Sheet)

ELEVATION 10.0

10.0

Hole No

Cooper River Rediversion

St. Stephen, S.C.

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE (BOX OR)
RECOVERY (SAMPLE)
ERY NO

REMARKS
Remarks
Remarks

28.0

Sand-Dark gray, dense,
with clay layers

83

Pull #1
28.0' to 31.0'
Run 3.0' Rec 2.5'
CL 0.5'

30

1 17

Pull #2
31.0' to 34.0'
Run 3.0' Rec 2.7'
CL 0.3'

32

90

34

100

Pull #3
34.0' to 37.0'
Run 3.0' Rec 3.0'

36

18

Pull #4
37.0' to 40.0'
Run 3.0' Rec 1.7'
CL 1.3'

38

56

40

2

Pull #5
40.0' to 42.6'
Run 2.6' Rec 2.6'

42

100

19

Pull #6
42.6' to 44.0'
Run 1.4' Rec 1.0'
CL 0.4'

44

91

Continued on Sheet #4

169

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

70.6

Hole No. 65

PROJECT

Cooper River Rediversion

St. Stephen, S.C.

SHEET 4

OF 7 SHEETS

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
(Description)

% CORE
RECOVERY

BOX OR
SAMPLE
NO

JAR

REMARKS

(Drilling time, water loss, depth of
weathering, etc., if applicable)

44b.

46

48

50

52

54

56

58

60

Sand-Dark gray, dense,
with fissile bedded
clay layers, slightly
micaceous

91

20

2

Pull #6
Continued

21

Pull #7
47.0' to 50.0'
Run 3.0' R.

100

3

Pull #8
50.0' to 53.0'
Run 3.0' R.
CL 0.7'

76

22

Pull #9
53.0' to 57.0'
Run 4.0' R.

100

4



23

Pull #10
57.0' to 61.0'
Run 4.0' R.
CL 1.6'


50

Continued on Sheet #5

170

DRILLING LOG (Cont Sheet)		ELEVATION OF SURFACE	Hole No.	
Upper River Rediversion		70.6	60	
		INSTALLATION	St. Stephen, S.C.	
DEPTH	LOG	CLASSIFICATION OF MATERIAL	TESTS	REMARKS
60'		Sand-Dark gray, dense, with fissile bedded clay layers, slightly micaceous	50	JAR, Pull #10 continued
62'			126	Pull #11 61.0' to 64.0' Run 3.0' Rec 3.0' CG 0.6'
64'				Pull #12 64.0' to 67.0' Run 3.0' Rec 3.0'
66'			100	Pull #13 67.0' to 70.0' Run 3.0' Rec 3.0'
68'		SC-Sand, dark gray, dense, clayey, with shell fragments	100	
70'		NOTE: Lost water at 70.0' Regained at 77.0'	100	Pull #14 70.0' to 73.0' Run 3.0' Rec 3.0'
			27	
		Dark gray, saturated sand, with loose shell fragments to 80.0'	50	Pull #15 73.0' to 77.0' Run 4.0' Rec 2.0' LL 2.0'
	Continued on Sheet 171			

171

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE	Hole No. 65		
PROJECT			INSTALLATION	SHEET 6		
Cooper River Rediversion			St. Stephen, S.C.			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO.	REMARKS <i>(Drilling time, water, mud, etc.)</i>
	76b		SC-Dark gray saturated sand, with loose shell fragments to 80.0'	50		Pull #15 Continued
	78		NOTE: Lost water at 70.0' Regained at 77.0'	66	6	Pull #16 77.0' to 80.0' Run 3.0' Rec 2.0' CL 1.0'
	80					
	82			43		Pull #17 80.0' to 83.0' Run 3.0' Rec 1.3' CL 1.7'
	84					
	86			100		Pull #18 83.0' to 86.0' Run 3.0' Rec 3.0'
	88					
	90			133	7	Pull #19 86.0' to 89.0' Run 3.0' Rec 4.0' CG 1.0'
	92					
					50	8
Continued on Sheet #7						

172

Continued on Sheet #7

172

DRILLING LOG (Cont Sheet)




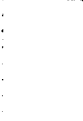
ELEVATION TOP OF HOLE

70.6

Hole No.

Super Silver Rediversion

St. Stephen, S.C.

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	PERCENT RECOVERY	BUCKET SAMPLE NO.	REMARKS
92.0		SC-Dark gray saturated sand, with loose shell fragments to 80.0'	50		Pull #20 Continued
94.0		NOTE: Lost water at 70.0' Regained at 77.0'			
		Sandstone-Gray, hard, argillaceous		WAX 1	Pull #21 94.0' to 98.0' Run 4.0' and 3.0' CL 10.5'
96.0		Shale-Dark gray, fissile bedded, dense, micaceous	67	WAX 2	
98.0		BOTTOM OF HOLE 98.0'			

173

Hole No. 66

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.	10. SIZE AND TYPE OF BIT 3/8" ID Split spoon		
2. LOCATION (Coordinates or Station) Sta. 597+10, 400' Right of Centerline				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core A MSL		
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME-75		
4. HOLE NO. (As shown on drawing title and file number) 66				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 19 Jars		
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES 2		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 45.4 (50.9) 50.1		
7. THICKNESS OF OVERBURDEN 84.5'				16. DATE HOLE STARTED 4-19-75 COMPLETED 4-20-75		
8. DEPTH DRILLED INTO ROCK 1.0'				17. ELEVATION TOP OF HOLE 53.4		
9. TOTAL DEPTH OF HOLE 85.5'				18. TOTAL CORE RECOVERY FOR BORING		
				19. SIGNATURE OF INSPECTOR Charles M. Deaver		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		SM-Sand, Tan fine, with some organic material			3. 4" Square Auger used to 10.0'
	2					W.T. 2.5'
	4		CL-Sandy clay, Tan and red			Date 4-19-75 Depth to water during drilling
	6					NOTE: Water table (insitu) found at 8.0' on penetration of drill bit, but water rose to a depth of 2.5' in approximately 5 min.
	8		SC-Clayey sand, Tan, fine			
	10		NOTE: Lithology breaks are approximated.			Fishtail 10.0' to 12.0'
	12					
Continued on Sheet #2 Note: Soils field classified in accordance with the Unified Soil Classification System.						

174

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

53.4

Hole No. 175

Super River Rediversion

INSTALLATION

St. Stephen, S.C.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS <i>(Time, time down, depth, weathering, etc.)</i>
12.0			SM-Sand, Tan and red, fine, with clay pockets			Fishtail 10.0' to 15.0'
14.0						Drive #1 15.0' to 16.5' Blows: 40
16.0						Fishtail 16.5' to 20.0'
18.0						
20.0			Sand-Gray, dense, argillaceous, interbedded with clay layers			Drive #2 20.0' to 21.5' Blows: 69
22.0						Fishtail 21.5' to 25.0'
24.0						Drive #3-25.0' to 25.4'-Blows: 100 (0.4')
26.0						Fishtail 25.4' to 30.0'

Continued on Sheet 23

175

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

53.4

Hole No. 66

PROJECT


INSTALLATION

SHEET

Cooper River Rediversion


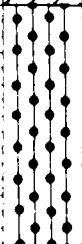
St. Stephen, S.C.

OF 6

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BORE OR SAMPLE NO	REMARKS
28.0			Sand-Gray, dense, argillaceous, interbedded with clay layers		J	Fishtail 25.4' to 30.0'
30					9	Drive #4 30.0' to 31.5' Blows: 98
32						Fishtail 31.5' to 35.0'
34						
36				10		Drive #5 35.0' to 36.5' Blows: 59
38						Fishtail 36.5' to 40.0'
40					11	Drive #6 40.0' to 41.5' Blows: 96
42			Sand is slightly calcareous, and contains some shell fragments in zone from 42.0' to 49.5'			Fishtail 41.5' to 45.0'
44						

Continued on Sheet #4

176

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
53.4		INSTALLATION		SHEET 14		
Superficial Rediversion		St. Stephen, S.C.		OF 8 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, etc., not at weathering, etc., if significant)
44.5			Sand-Gray, dense, interbedded with clay layers			Fishtail 41.5' to 45.0'
45					12	Drive #7 45.0' to 46.5' blows: 109
46						Fishtail 46.5' to 50.0'
48						
50			Slightly calcareous, with shell fragments from 42.0' to 49.5'		13	Drive #8 50.0' to 51.5' Blows: 62
52						Fishtail 51.5' to 55.0'
54						
56					14	Drive #9 55.0' to 56.5' Blows: 3-
58						Fishtail 56.5' to 60.0'
60						
62						
64						
66						
68						
70			SM-Sand: gray, dense, saturated, non-cemented			

Continued on Sheet 15

177

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 53.4		Hole No. 66		
PROJECT		INSTALLATION		SHEET 5		
Cooper River Rediversion		St. Stephen, S.C.		OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water level, depth, weathering etc. if significant)
60.4			SM-Sand, gray, saturated, dense		15	Drive #10-60.0' to 60.4'-Blows: 100/0.4'
62						Fish tail 60.4' to 65.0'
64						
66					16	Drive #11-65.0' to 65.6'-Blows: 100/0.5'
68				100		Pull #1 65.5' to 70.5' Run 5.0' Rec 5.0'
70					17	
72					1	Pull #2 70.5' to 75.5' Run 5.0' Rec 0.0' CL 5.0'
74				0		
76						Pull #3 Cont In add



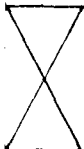
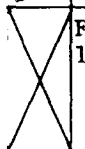


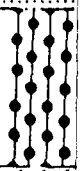




Continued on Sheet #6

178

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, S.C.		H. E. Smith		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if pertinent)
	76.0		SM-Sand, gray, saturated, dense		BOX	Pull #3 75.5' to 80.5' Run 5.0' Rec 5.0'
	78			100	1	
	80				18	
	82		SM-Sand, dark gray, dense, with shell fragments, micaceous, calcareous		19	Pull #4 80.5' to 85.5' Run 5.0' Rec 2.5' CL 2.5'
	84			50	2	
		TOP OF ROCK 84.5'				
		Sandstone-Gray, dense, hard, calcareous, fractured				
82.1	85.5	Shale-Dark gray, micaceous				
BOTTOM OF HOLE 85.5'						

179

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 7 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.	10. SIZE AND TYPE OF BIT Shelby Tube, 4X5 1/2 Core Bb		
2. LOCATION (Coordinates or Station) Sta. 598 + 60, 320' Left of E				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 4X5 1/2 Denison, 6" Fish tail		
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME-75		
4. HOLE NO. (As shown on drawing title and file number) 67				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 43 UNDISTURBED 11	
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES 9		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER +62.0		
7. THICKNESS OF OVERBURDEN 88.0'				16. DATE HOLE STARTED 3-6-75 COMPLETED 3-9-75		
8. DEPTH DRILLED INTO ROCK 18.5'				17. ELEVATION TOP OF HOLE +63.4		
9. TOTAL DEPTH OF HOLE 106.5'			18. TOTAL CORE RECOVERY FOR BORING 94			
			19. SIGNATURE OF INSPECTOR Charles M. Deaver			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		SM-CL- Silty fine sand and silty clay, Tan and Orange	100	J-1	
	2			100	S-1	Push #1 0.7' to 2.5' Run 1.8' Rec 1.8'
	4		CL-Tan and Red Silty clay	M.C. 26% 100	J-2	
	6			100	S-2	Push #2 2.5' to 4.5' Run 2.0' Rec 2.0'
	8		SC-Orange and Red clayey sand	100	J-3	
	10		NOTE: Lithology of overburden materials is approximated.	100	S-3	Push #3 4.5' to 6.0' Run 1.5' Rec 1.5'
					J-4	
					S-4	Push #4 6.5' to 8.4' Run 1.9' Rec 1.9'
					J-5	
					S-5	Push #5 8.8' to 10.8' Run 2.0' Rec 2.0'
			Continued on Sheet #2			
			LAB. CLASSIFICATIONS			
			Spl. # Elev.			
			S-2 59.1' - 60.9' CH			
			S-7 47.4' - 49.2' SM			
			S-10 42.1' - 43.9' SC			
			S-14 30.0' - 27.0' SM			
			D-14 25.0' - 27.0' SM W/ CH Layers			
			D-16 15.0' - 17.0' CH Sandy			
						J=Jar Sample S=Shelby Sample D=Denison Sample W=Wax Sample

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 67		
		+63.4				
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		St. Stephen, S.C.		Of 7 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	10 ^b		SC-Orange and Red clayey sand Continued	100	J-5	Push #5 Continued
	12		SP-Tan clayey sand, coarse, with trace of gravel from 16.0' to 17.0'			FISHTAIL 10.8' to 12.6'
	14			100	S-6 J-7	Push #6 12.6' to 14.2' Run 1.6' Rec 1.6'
	16			M.C. 13% 100	S-7	Push #7 14.2' to 16.2' Run 2.0' Rec 2.0'
	18		SM-CL-Tan and Gray silty sand interbedded with silty clay, some gravel, moist	100	J-8 S-8 J-9	Push #8 16.2' to 17.5' Run 1.3' Rec 1.3'
	20		CL-Gray lean clay, laminated with sand	100	S-9 J-10	Push #9 17.5' to 19.5' Run 2.0' Rec 2.0'
	22			100	S-10 J-11	Push #10 19.5' to 21.5' Run 2.0' Rec 2.0'
	24		ML-Dark gray silty clay with sand lenses.	0.0	S-11 J-12	Push #11 21.5' to 22.8' Run 1.3' Rec 1.3'
	26			60	Box 1	FISHTAIL Started Denison @ 22.9' Pull #1 22.9' to 25.4' Run 2.5' Rec 0.0' CL 2.5'
			Continued on Sheet #3			Pull #2 Continued

181

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +63.4		Hole No. 67		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 3 OF 7 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	26		ML-Dark gray silty clay with sand lenses.	60	Box 1	Pull #2 25.4' to 27.9' Run 2.5' D-12 Rec 1.5' J-13 CL 1.0'
	28		SM-Gray silty sand, Wet	66		Pull #3 27.9' to 28.9' Run 1.0' Rec 0.6' CL 0.4'
	30			100		D-13 J-14 Pull #4 28.9' to 31.4' Run 2.5' Rec 2.5'
	32		SP-ML-Gray fine sand interbedded with gray silty clay, moist, -organic seams above 34.0'-Micaceous below 34.0'	M.C. 32% 100	Box 2	Pull #5 31.4' to 33.9' Run 2.5' Rec 2.5'
	34			M.C. 32% 100		S14 J-15 Pull #6 33.9' to 36.4' Run 2.5' Rec 2.5'
	36			100		D-15 J-16 Pull #7 36.4' to 38.9' Run 2.5' Rec 2.5'
	38			100		D-16 J-17 Pull #8 38.9' to 41.4' Run 2.5' Rec 2.5'
	40			100		D-17 J-18 Pull #9 Continued
	42		NOTE: Lithology of overburden materials is approximated.	100	Box 4	
			Continued on Sheet #4			
182						

182

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+63.4

Hole No. 67

DATE

INSTALLATION

SHEET 4

Cooper River Rediversion

St. Stephen, S.C.

DATE 7 2005

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE BOX OR RECOVER SAMPLE ERY NO	REMARKS Drilling time, water, etc. and weathering, etc. if significant
42			SP-ML-Gray fine sand interbedded with gray silty clay, moist, -organic seams above 34.0'- Micaceous below 34.0'	100	Pull #9 41.4' to 43.9' Run 2.5' Rec 2.5'
44				Box 4	J-19
46				100	Pull #10 43.9' to 46.4' Run 2.5' Rec 2.5'
48				100	J-20
50				100	Pull #11 46.4' to 48.9' Run 2.5' Rec 2.5'
52				Box 5	J-21
54				100	Pull #12 48.9' to 51.4' Run 2.5' Rec 2.5'
56				48	Pull #13 51.4' to 53.9' Run 2.5' Rec 1.2' CL 1.3'
58				24	J-23
			SP-Gray fine sand with some clay pockets	Box 6	J-24
				36	Pull #14 53.9' to 56.4' Run 2.5' Rec 0.6' CL 1.9'
			SM-Gray fine sand, loose, traces of clay and silt, Wet		J-25
					J-26
					Pull #15 56.4' to 58.9' Run 2.5' Rec 0.6' CL 1.6'

(continued on sheet #5)

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE +63.4		Hole No. 67	
PROJECT		INSTALLATION		SHEET OF 7 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO
	58.6		SM-Gray fine sand loose traces of clay and silt wet		Pull #15 Continued
	60				J-27 58.9' to 60.9' Run 2.0' Rec 1.0' CL 1.0'
	62				J-28 60.9' to 63.4' Run 2.5' Rec 0.0' CL 2.5'
	64			box to	Pull #18 63.4' to 65.9' Run 2.5' Rec 0.0' CL 2.5'
	66				FISHTAIL Pull #19 66.0' to 68.5' Run 2.5' Rec 0.0' CL 2.5'
	68				FISHTAIL 68.5' to 69.7' Splitspoon @ 69.7'
-6.3	69.7				J-29 BLOWS 100/0.5'
	70		SP-gray sand, saturated free flowing		FISHTAIL 70.2' to 75.0'
	72				
	74				

Continued on Sheet #6

184

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+63.4

Hole No. 67

Location: Wilcox Rediversion

St. Stephen, S.C.

DATE: 10/1/74

DRILLER: J. L. WATKINS

LOGGERS: J. L. WATKINS

REMARKS:

74

BLOWS

SP-Gray
sand, saturated
free flowing



FISHTAIL
70.2' to 75.0'

J-30

100/0.4'

76

FISHTAIL
75.4' to 80.0'

78

80

J-31

100/0.5'

82

FISHTAIL
80.5' to 85.0'

84

J-32

100/0.5'

86

FISHTAIL
85.5' to 88.0'

NOTE: Top of rock
was picked by
drill action

88

TOP OF ROCK 88.0'

Scale-bar gray
slightly calcareous
fissile bedded
micaceous, dense
some sand in scale
from 88.0' to 88.3'



FISHTAIL
88.0' to 88.3'

93

Pull #100
Continued

90

Continued on Sheet 66

Note: Soils field classified
in accordance with the Unified
Soil Classification System.

185

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

+3.3

Hole No. 1

SHEET 7
OF 7 SHEETS

PROJECT

Copper River Rediversion

CLASSIFICATION OF MATERIAL
Description

REMARKS

Notes on logs, samples, etc.
See also log of adjacent

ELEVATION

DEPTH

LEGEND

Shale-Dark, ind.
slightly silty, gray,
fissile below,
micaceous,
dense,
some sand in shale
from 88.0' to 88.1'

Pull #20
88.9' to 91.9'
Run 3.0' Rec 2.8'
CG 0.2'

Pull #21
91.9' to 94.9'
Run 3.0' Rec 3.2'
CG 0.2'

Pull #22
94.9' to 97.9'
Run 3.0' Rec 3.0'

Pull #23
97.9' to 100.9'
Run 3.0' Rec 1.0'
CL 2.0'

Pull #24
100.9' to 103.4'
Run 2.5' Rec 3.1'
CG 0.6'

Pull #25
103.4' to 106.5'
Run 3.1' Rec 3.6'
CG 0.5'

Limestone-gray, green
glauconitic, fossiliferous
Limestone-light gray
fossiliferous

BOTTOM OF HOLE 106.5'

186

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	Hole No.
PROJECT: Cooper River Rediversion		55.4	68
LOCATION: St. Stephens, S.C.		SHEET 2	
ELEVATION	DEPTH	STRATA	REMARKS
12.0		SM-Tan and red sand	Push #7 11.3' to 13.3' Run 2.0' Rec 2.0'
		Cobble at 13.5'	
14.0			Push #8 13.3' to 15.3' Run 2.0' Rec 2.0'
16.0		Dark gray clay, interbedded with sand seams.	Push #9 15.3' to 17.3' Run 2.0' Rec 2.0'
18.0			Push #10 17.3' to 19.7' Run 2.4' Rec 2.4'
20.0			Push #11 19.7' to 21.2' Run 1.5' Rec 1.5'
22.0			Push #12 21.2' to 23.7' Run 2.5' Rec 2.5'
24.0		Clay layers contain slickenside surfaces from 23.0' to 26.6'	Push #13 23.7' to 25.1' Run 1.4' Rec 1.4'
26.0			Push #14 25.1' to 26.6' Run 1.5' Rec 1.5'
28.0		Dark gray sand interbedded with clay layers.	Push #15 26.6' to 27.6' Run 1.0' Rec 1.0'
28.0			FISHTAIL

108

AD-A149 576

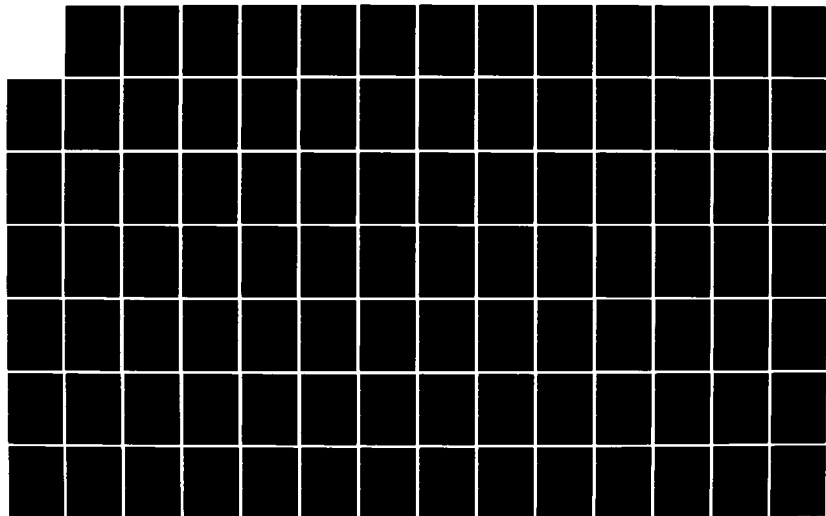
COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) ARMY ENGINEER DISTRICT
SAVANNAH GA FEB 76

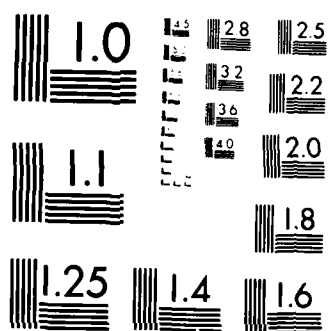
3/4

UNCLASSIFIED

F/G 8/7

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.			
		55.4		56			
Cooper River Rediversion		INSTALLATION		SHEET 3			
		St. Stephen, S.C.		OF 7 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS Description	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS Drilling time, water, etc. depth, weathering, etc. if applicable	
28.0			Dark gray sand, dense, argillaceous, slightly micaceous, interbedded with clay layers.			FISHTAIL	
30.0	50				Pull #1 28.3' to 31.3' Run 3.0' Rec 1.5' CL 1.5'		
				DENN. #16	16		
32.0				M.C. 43%	DENN. #17		Pull #2 31.3' to 34.3' Run 3.0' Rec 2.0' CL 1.0'
				66			
34.0							
					17		Pull #3 34.3' to 37.3' Run 3.0' Rec 1.5' CL 1.5'
36.0				50			
				DENN. #18	18		
38.0							Pull #4 37.3' to 40.3' Run 3.0' Rec 0.5' CL 2.5'
40.0			SM-Dark gray sand, dense, non-cemented, wet, slightly micaceous (Slumps on withdrawal)	16			
					19		
42.0				M.C. 35%			Pull #5 40.3' to 43.3' Run 3.0' Rec 1.5' CL 1.5'
				50			
				DENN. #19	20		
44.0						Pull #6 Continued	

Continued on Sheet #4

189

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 68		
PROJECT		INSTALLATION		SHEET 4 OF 7 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	44b	c	d	e	f	g
			SM-Dark gray sand, dense, wet, slightly micaceous. (Slumps on withdrawal)	33	DENN. #20	Pull #6 43.3' to 46.3' Run 3.0' Rec 0.0' CL 2.0'
	46		Calcareous pocket at 46.0'		21	
	48			0		Pull #7 46.3' to 49.3' Run 3.0' Rec 0.0' CL 3.0'
	50			83	DENN. #21	Pull #8 49.3' to 52.3' Run 3.0' Rec 2.5' CL 0.5'
	52				22	
	54			0		Pull #9 52.3' to 54.3' Run 2.0' Rec 0.0' CL 2.0'
	56			0		Pull #10 54.3' to 57.3' Run 3.0' Rec 0.0' CL 3.0'
	58				23	Drive #1 Blows-100/0.7'
	60			0		Pull #11 58.0' to 61.0' Run 3.0' Rec 0.0' CL 3.0'

Continued on Sheet #5

190

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

55.4

Hole No. 58

Cooper River Rediversion

St. Stephen, S.C.

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS

NO. OF SAMPLES

REMARKS

60

SM-Dark gray sand, dense,
wet, slightly micaceous.
(Slumps on withdrawal)

JAR

Pull #11 Continued

62

45

Pull #12
61.0' to 64.3'
Run 3.3' Rec 1.5'
CL 1.8'

64

M.C. DENN.
#22

24

Pull #13
64.3' to 67.3'
Run 3.0' Rec 0.0'
CL 3.0'

66

0

68

25

Drive #2
Blows-100/0.2'

Pull #14
67.6' to 70.6'
Run 3.0' Rec 0.0'
CL 3.0'

70

0

72

26

Drive #3
Blows-100/0.2'

Pull #15
71.0' to 74.0'
Run 3.0' Rec 0.0'
CL 3.0'

74

0

27

Drive #4
Blows-100/0.2'

Pull #16
74.3' to 77.3'
Run 3.0' Rec 0.0'
CL 2.5'

76

16

Continued on Sheet #6

191

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 55.4		Hole No. 68		
PROJECT		INSTALLATION		SHEET 6 OF 7 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVER ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	76b		SM-Dark gray sand, dense, wet, slightly micaceous. (Slumps on withdrawal)		JAR	Pull #16 Continued
	78				28	Pull #17 77.3' to 80.3' Run 3.0' Rec 0.0' CL 3.0'
	80		SM-Dark gray silty sand, with loose shell fragments, dense		29	Drive #5 Blows-100/0.5'
	82		TOP OF ROCK 81.8' Shale-Dark gray, dense, micaceous		WAX #23	Pull #18 80.8' to 85.8' Run 5.0' Rec 5.0'
	84		Sandstone-Dark gray, hard, fractured with clay laminae, slightly calcareous	100	BOX 1	
	86		Shale-Dark gray, dense, micaceous, calcareous		WAX #24	Pull #19 85.8' to 90.8' Run 5.0' Rec 5.0'
	88		Sandstone seam from 87.2' to 87.4'	100		
	90		Sandstone from 88.7' to 89.1'		BOX 2	
	92		Shale-Dark gray, fissile bedded, hard, micaceous		WAX #25	Pull #20 Continued
			Continued on Sheet #7			

192

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

55.4

Hole No. 66

Cooper River Rediversion

St. Stephen, S.C.

ELEVATION

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS
Description

% CORE
RECOVERY

BOX OR
SAMPLE
NO.

REMARKS

Drilling time, water, mud, weather, etc.

92.5

Shale-Dark gray, dense,
hard, fissile bedded,
micaceous

18

BOX
2

WAX
#26

Pull #20
90.8' to 95.8'
Run 5.0' Rec 0.9'
CL 4.1'

94

WAX
#27

96

400

Pull #21--to 3.0'
95.8' to 95.8'
Run 1.0' Rec 4.0'

98

Limestone-Hard, dense,
fossiliferous, gray

125

BOX
3

WAX
#28

Pull #22
96.8' to 100.8'
Run 4.0' Rec 5.0'
CG 1.0'

WAX
#29

100

WAX
#30




BOTTOM OF HOLE 100.8'

193

Hole No. 69

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 6 SHEETS	
1. PROJECT		South Atlantic		St. Stephen, S.C.			
Cooper River Rediversion				10. SIZE AND TYPE OF BIT 5" Square Auger & 6x7 3/4"			
2. LOCATION (Coordinates or Station)		Sta. Centerline 600+20 400' Left		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		Bit	
3. DRILLING AGENCY		Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL		MSL	
4. HOLE NO. (As shown on drawing title and file number)		69		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 42 UNDISTURBED	
5. NAME OF DRILLER		C. Parden		14. TOTAL NUMBER CORE BOXES		3	
6. DIRECTION OF HOLE		<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG FROM VERT		15. ELEVATION GROUND WATER		45.6	
7. THICKNESS OF OVERBURDEN		85.5'		16. DATE HOLE		STARTED 26 March 75 COMPLETED 28 March 75	
8. DEPTH DRILLED INTO ROCK		5.0'		17. ELEVATION TOP OF HOLE		61.1'	
9. TOTAL DEPTH OF HOLE		90.5'		18. TOTAL CORE RECOVERY FOR BORING		54 %	
				19. SIGNATURE OF INSPECTOR		Geo. - Canning	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	0		SM-Gray, silty fine sand		JAR 1 BAG 1	W.T. 18.0' Date 26 March 75 Depth to water during drilling	
	2						
	4		CL-Tan and red, fine sandy clay		JAR 2 BAG 2	W.T. 15.5' Water table reading 24 hrs. after hole completed	
	6						
	8		SC-Tan and red, clayey fine sand		JAR 3 BAG 3	LAB. CLASSIFICATION Sol. Elev. Class. B-1 58.1'-61.1' SM B-4 49.1'-52.1' SM B-9 34.1'-37.1' SM B-9 34.1'-37.1' CH B-12 25.1'-28.1' SM- W/ Clay Lys	
	10				JAR 4 BAG 4	Note: Sand and Clay Layers Separated.	
	12						
NOTE: Soils field classified in accordance with the Unified Soil Classification System							

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 61.1		Hole No. 52	
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 2	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE BOX OR RECOVERY	SAMPLE NO
12	12		SC-Tan and red, clayey fine sand		1
				JAR	5
14				BAG	5
16				JAR	6
				BAG	6
18	18		SM-Tan, silty fine sand with clay layers		7
				JAR	7
20				BAG	7
22				JAR	8
				BAG	8
24	24		Dark gray		9
				JAR	9
26				BAG	9
28					

Continued on Sheet #3

195

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 61.1		Hole No. 69		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 3 OF 6 SHEETS		
ELEVATION a	DEPTH 28 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	30		Sand-Dark gray, Silty interbedded with clay layers		JAR 10 BAG 10	
	32				JAR 11 BAG 11	
	34				JAR 12 BAG 12	
	36				JAR 13 BAG 13	
	40		Shale-Dark gray, fissil bedded with Mica and some organic material along some of the bedding, interbedded with sandstone layers. Slickside surface at 42.0' Sandstone layers 40.0' to 40.1'	66	BOX 1	Pull #1 39.0' to 42.0' Run 3.0' Rec 2.0' CL 1.0'
	42					Pull #2 42.0' to 45.0' Run 3.0' Rec 2.0' CL 1.0'
	44			66		
			Continued on Sheet #4			

196

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

61.1

Hole No.

Sheet 4

of 6 sheets

Copper River Rediversion

St. Stephen, S.C.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, etc.)
	44		Shale-Dark gray, fissil bedded with Mica and some organic material along some of the bedding, interbedded with sandstone layers.	66	BOX 1	Pull #2 Continued
	46		Slickside surface at 42.0' Sandstone layers 40.0' to 40.1'	66		Pull #3 45.0' to 48.0' Run 3.0' Rec 2.0' CL 1.0'
	48		42.2' to 42.3' 46.6' to 46.8' 48.3' to 48.5'			Pull #4 48.0' to 51.0' Run 3.0' Rec 1.2' CL 1.8'
	50			40		
	52		Clay-Dark gray, highly consolidated, interbedded with sand (SP)		BOX 2	Pull #5 51.0' to 56.0' Run 5.0' Rec 2.2' CL 2.8'
	54			44		
	56		Sand-Silty, dark gray, with shell fragments. "SM"		BAG 14 JAR 14	
	58					
	60					
	62					
	64					
	66					
	68					
	70					
	72					
	74					
	76					
	78					
	80					
	82					
	84					
	86					
	88					
	90					
	92					
	94					
	96					
	98					
	100					

Continued on Sheet #5

197

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 61.1		Hole No. 69		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 5 OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth, weathering, etc., if significant)
60	60		Sand-Gray, clayey, fine grain with shell fragments.		BAG 15	
62				JAK 15		
64				BAG 16		
66				JAR 16		
68				BAG 17		
			Sand-Gray, silty to fine, interbedded with clay.		JAR 17	
70					BAG 18	
					JAR 18	
72					BAG 19	
					JAR 19	
74					BAG 20	
76						

Continued on Sheet #6

198

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

61.1

Hole No.

PROJECT

Winged River Rediversion

INSTALLATION

St. Stephen, S.C.

DEPTH

LEGEND

CLASSIFICATION OF MATERIALS

Description

% CORE

RECOVERY

BOX OF

SAMPLE

NO.

REMARKS

Drilling time, water, etc.

76

Sand-Gray, silty to fine,
interbedded with clay.

JAR
20

78

80

82

84

84.5

TOP OF ROCK 85.5'

86

Shale-Dark gray,
sandy, dense

Pull #6
85.5' to 90.5'
Run 5.0' Rec 3.6'
CL 1.4'

88

90

90.4













BOTTOM OF HOLE 90.5'

72
B
O
X
3
WAX
1

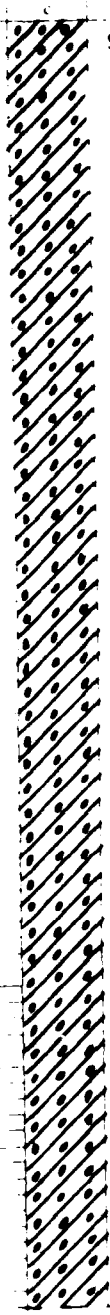
199

Hole No. 70


DRILLING LOG		DIVISION	INSTALLATION		SHEET 1 OF 6 SHEETS	
1 PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.		10 SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 4x5" Core Bbl	
2 LOCATION (Coordinates or Station) Sta. 600+20, 400' Right of Centerline			11 BAYUM FOR ELEVATION SHOWN (TBM or MCL) MCL		12 MANUFACTURER'S DESIGNATION OF DRILL MCL-75	
3 DRILLING AGENCY Savannah District			13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN 10 Jars		UNDISTURBED	
4 HOLE NO. (As shown on drawing title and file number) 70			14 TOTAL NUMBER CORE BOXES 5		15 ELEVATION GROUND WATER 54.7	
5 NAME OF DRILLER T. W. Scott			16 DATE HOLE STARTED 4-18-75		COMPLETED 4-19-75	
6 DIRECTION OF HOLE X VERTICAL UNCLINED _____ DEG. FROM VERT.			17 ELEVATION TOP OF HOLE		18 TOTAL CORE RECOVERY FOR BORING	
7 THICKNESS OF OVERBURDEN 84.0' (-9.5', 10.5', 10.20')			19 SIGNATURE OF INSPECTOR			
8 DEPTH DRILLED INTO ROCK 1.5' + 9.5', 12.5', 10.20'			9 TOTAL DEPTH OF HOLE 35.5'			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0	0		SM-Sand, Tan, with some organic silt		1	4" Square Auger used from 0.0' to 3.0'
2	2		CL-Sand, clay, Tan and red		2	W.T. 1.5' Date 4-18-75 Depth to water during drilling
4	4					Fishtail Bit 3.0' to 5.0'
6	6				3	Drive #1 5.0' to 6.5' Blows: 42
8	8					Fishtail Bit 6.5' to 10.0'
10	10				4	Drive #2 10.0' to 11.5' Blows: 27
12	12		SC-Clayey sand, Tan, with some silt			Fishtail Bit
Continued on Sheet 2				BLOWS PER FOOT:		
NOTE: Soils field classified in accordance with the Unified Soil Classification System.				Number required to drive 1 3/8" ID splitspoon w/140 lb; hammer falling 30". 200		

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 56.2		Hole No. 70	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 2 OF 6 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER ERY	BOX OR SAMPLE NO JAR BOX	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	12 ^b		SC-Clayey sand, Tan, with some gravel			Fishtail Bit 11.5' to 15.0'
	14					
	16				5	Drive #3 15.0' to 16.5' Blows: 35
6.2			Limestone-Tan, sandy, hard, Fossiliferous, dense			Pull #1 16.5' to 20.5' Run 5.0' Rec 5.0'
	18		Shale-Dark gray, with thin seams tan sandstone			
7.4			Sandstone-Gray, calcareous, hard, dense	100		
7.5			SM-Sand, dark gray, with shell fragments, calcareous, argillaceous			
	20		Limestone-Gray, hard, fossiliferous			Pull #2 20.5' to 25.5' Run 5.0' Rec 4.5' CL 0.5'
11.2	22		Sand(SM), Gray, with shell fragments from 19.7' to 20.2'		1	
	24		Shale-Dark gray, dense, fissile bedded, with thin sandstone seams	90		
	26		SM-Sand, gray, dense, argillaceous, interbedded with clay layers	80	6	Pull #3 25.5' to 30.5' Run 5.0' Rec 4.0' CL 1.0'
	28				2	
Continued on Sheet #3						

201

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 56.2		Hole No. 70			
PROJECT		INSTALLATION		SHEET 3 OF 6 SHEETS			
Cooper River Rediversion		St. Stephen, S.C.					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	
28 ^b			SM-Sand, gray, dense, argillaceous, interbedded with clay layers		JAR BOX	Pull #3 Continued	
30				7			
32							Pull #4 30.5' to 35.5' Run 5.0' Rec 2.7' CL 2.3'
34				54	2		
36					8		Pull #5 35.5' to 40.5' Run 5.0' Rec 4.2' CL 0.8'
38				84			
40					9		Pull #6 40.5' to 45.5' Run 5.0' Rec 0.2' CL 4.8'
42				4	3		
44							

202

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 70			
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS			
Cooper River Rediversion		St. Stephen, S.C.					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	
a	b	c	d	e	JAR BOX	R	
	44		SM-Sand, Gray, dense, argillaceous, interbedded with clay layers			Pull #6 Continued	
	46					Pull #7 45.5' to 50.5' Run 5.0' Rec 2.5' CL 2.5'	
	48				50		
	50			Calcareous pocket at 50.0' with some black organic material.		10	
	52						Pull #8 50.5' to 55.5' Run 5.0' Rec 2.2' CL 2.8'
	54				44		
	56					11	
	58				50		Pull #9 55.5' to 60.5' Run 5.0' Rec 2.5' CL 2.5'
	60						
			Continued on Sheet #5				

203

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

56.2

Hole No. 70

PROJECT

Cooper River Rediversion

INSTALLATION

St. Stephen, S.C.

SHEET 5

OF 6 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO. JAR BOX	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f
	60		SM-Sand, gray, dense, argillaceous, interbedded with clay layers		12	Pull #9 Continued
	62					Pull #10 60.5' to 65.5' Run 5.0' Rec 0.5' CL 4.5'
	64			10		
	66				13	Pull #11 65.5' to 70.5' Run 5.0' Rec 2.0' CL 3.0'
	68		SM-Sand, gray, dense, saturated, slightly micaceous	40	14	
	70					Pull #12 70.5' to 75.5' Run 5.0' Rec 0.0' CL 5.0'
	72			0		
	74					Pull #13 Continued
	76					

Continued on Sheet #6

204

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 56.2		Hole No. 70	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 6 OF 6 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO JAR BOX	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f
	76		SM-Sand, gray, dense, saturated,			Pull #13 75.5' to 80.5' Run 5.0' Rec 2.5' CL 2.5'
	78			50	4	
	80				14	
	82		SM-Sand, dark gray, dense, with shell fragments, calcareous, micaceous		15	Pull #14 80.5' to 85.5' Run 5.0' Rec 3.3' CL 1.7'
	84		TOP OF ROCK 84.0	66		
			Sandstone-Gray, dense, hard, calcareous, argillaceous			
			Shale-Dark gray, micaceous		5	
-29.3	85.5		Sandstone-Gray, dense BOTTOM OF HOLE 85.5'			

205


Hole No. 71

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 6 SHEETS		
1. PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.			
2. LOCATION (Coordinates or Station) Sta. 602+00, 450' Left of Centerline			10. SIZE AND TYPE OF BIT 1 3/8" ID Spitspoon & 4x5 1/2" Core Bbl & 6" Fishtail			
3. DRILLING AGENCY Savannah District			11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)			
4. HOLE NO. (As shown on drawing title and file number)		71	12. MANUFACTURER'S DESIGNATION OF DRILL CME-75			
5. NAME OF DRILLER T. W. Scott			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 29	UNDISTURBED 2	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			14. TOTAL NUMBER CORE BOXES	7		
7. THICKNESS OF OVERBURDEN		82.0'	15. ELEVATION GROUND WATER	46.7		
8. DEPTH DRILLED INTO ROCK		6.0'	16. DATE HOLE	STARTED 3-25-75	COMPLETED 3-26-75	
9. TOTAL DEPTH OF HOLE		88.0'	17. ELEVATION TOP OF HOLE	56.2		
			18. TOTAL CORE RECOVERY FOR BORING	91.2 %		
			19. SIGNATURE OF INSPECTOR Charles M. Deaver			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. BOX JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) BLOWS
	0		SM-Tan sand, loose			
	2		SM-Tan and red sand, slightly clayey		1	11
	4		SC-Tan and red, sandy clay		2	W.T. 9.5' Date 3-25-75 Depth to water during drilling
	6		Some gravel below 6.0'		3	24
	8				4	54
	10		SM-CL-Tan and red sand interbedded with clay seams		5	74
	12				6	40
					7	31
					8	10
						14

Continued on Sheet #2

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 1/2" ID spitspoon w/140 lb. hammer falling 30". 206

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 56.2	Hole No. 71			
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.	SHEET 2 OF 6 SHEETS			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO BOX/JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) K	BLOWS
	12		SM-CL-Tan and red sand interbedded with clay seams		9		19
	14				10		15
	16				11		28
	18				12		48
	20				13		50
	22				14		54
	24				15		100/0.4'
	26				16		102
	28				17		100/0.3'
					18		Fishtail
					Fishtail		

Continued on Sheet #3

207

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

56.2

Hole No. 71

PROJECT

Cooper River Rediversion

SHEET 3

OF 6 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL Description	REMARKS For long time water level depth weathering, etc. if significant
28 b			SM-Dark gray sand, argillaceous, dense, interbedded with clay layers, slightly micaceous	BOX JAR
	30			18
	32			19
	34			
	36			Fishtail-Refusal
	38			Pull #1 36.0' to 39.0' Run 3.0' Rec 2.7' CL 0.3'
	40			Pull #2 39.0' to 42.0' Run 3.0' Rec 3.3' CG 0.3'
	42			Pull #3 42.0' to 45.0' Run 3.0' Rec 3.0'
44				

Continued on next sheet

208

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 71		
PROJECT		INSTALLATION		SHEET 4 OF 6 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	44.6		SM-Dark gray sand, argillaceous, dense, interbedded with clay layers, slightly micaceous	100	22	Pull #3 Continued
46	100				Pull #4 45.0' to 46.5' Run 1.5' Rec 1.5'	
48	100			2	Pull #5 46.5' to 50.0' Run 3.5' Rec 3.5'	
50			Sandstone-Dark gray, hard, calcareous		23	Pull #6 50.0' to 54.0' Run 4.0' Rec 1.3' CL 2.7'
52			SM-Dark gray sand, dense, with loose shell fragments, micaceous	32		
54						
56						
58			SM-Dark gray sand, saturated, loose, dense, micaceous	100	24	Pull #7 54.0' to 59.0' Run 5.0' Rec 5.0'
60				50	25	Pull #8 Continued

Continued on Sheet #5

209

DRILLING LOG (Cont Sheet)

Hole No. 71

PROJECT

SHEET 5
OF 6 SHEETS

Cooper River Rediversion

REMARKS

Depth of penetration at each lift

ELEVATION	DEPTH	LEGEND
a	b	c
60		
62		
64		
66		
68		
70		
72		
74		
76		

SM-Dark gray

silty clay

with sand

8

0' to 1.0'

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210

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 71		
PROJECT		INSTALLATION		SHEET 6		
Cooper River Rediversion		St. Stephen, S.C.		OF 6 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
76 ^b			SM-Dark gray sand, saturated, loose, dense, micaceous	116	5	Pull #13 75.0' to 78.0' Run 3.0' Rec 3.5' CG 0.5'
78			SM-Dark gray sand, with clay pockets, micaceous			Pull #14 78.0' to 81.0' Run 3.0' Rec 4.6' CG 1.6'
80			Shell fragments below 80.5'	153	29	
82			TOP OF ROCK 82.0'	6		Pull #15 81.0' to 84.0' Run 3.0' Rec 3.0'
			Sandstone-Dark gray, hard, calcareous	100		
84			Sandstone-Dark gray, fine, dense, well cemented			Pull #16 84.0' to 88.0' Run 4.0' Rec 4.0'
86			Shale-Dark gray, fissile bedded, micaceous	100	7	WAX 1 WAX 2
88.0			BOTTOM OF HOLE 88.0'			

211

211

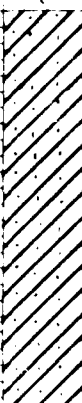

Hole No. 72

DRILLING LOG		DIVISION		DESCRIPTION		SHEET 1 OF 7 SHEETS	
1. PROJECT		South Atlantic		2. LOCATION (Coordinates or Station)		3. DRILLING AGENCY	
Cooper River Rediversion		Sta. 602+00, 500' Right of Center		Savannah District		4. HOLE NO. (As shown on drawing title and file number)	
5. NAME OF DRILLER		T.W. Scott		6. DIRECTION OF HOLE		7. THICKNESS OF OVERBURDEN	
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE		10. REMARKS	
11. ELEVATION		12. DEPTH		13. LEGEND		14. CLASSIFICATION OF MATERIAL	
15. BOX OR		16. FEET		17. REMARKS		18. Drilling time, water loss, depth of weathering, etc., if significant	
19. 0		20. 0		21. SM- Tan, fine sand		22. 4" Square Auger used from 0.0' to water table (10.0')	
23. 2		24. 2		25. SC-Tan, clay		26. 3	
27. 4		28. 4		29. SC-Tan and red, sandy clay		30. 4	
31. 6		32. 6		33. Sand grades from fine to medium with depth.		34. 5	
35. 8		36. 8		37. Some gravel at bottom		38. 5	
39. 10		40. 10		41. SC-Tan clayey sand, medium sand, fine gravel, pebbles		42. 5	
43. 12		44. 12		45. NOTE: Lithology breaks in areas sampled by split spoon sampler.		46. Fishtail	
47. 12		48. 12		49. Continuation of report 72		50. BLOWS PER FOOT:	
51. 12		52. 12		53. NOTE: Soils field classified in accordance with the Soil Classification		54. Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30". 212	

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 72			
PROJECT		INSTALLATION		SHEET 2			
Cooper River Rediversion		St. Stephen, S.C.		OF 7 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if applicable)	
12.0			SM-Tan, sand, wet, with some laminae and some random pockets	e	JAR	K	
14							Fishtail
16							Drive #1 15.0' to 16.5' Blows: 40
18							Fishtail
20							Drive #2 20.0' to 21.5' Blows: 102
22							Fishtail
24							Drive #3 25.0' to 26.5' Blows: 79
26							Fishtail
28							

Continued on Sheet #3

2/3

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 60.1		Hole No. 72		
PROJECT		INSTALLATION		SHEET 3 OF 7 SHEETS		
Cooper River Rediversion		St. Stephen, S.C.				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
28.6			SM-Gray, sand, dense, argillaceous, interbedded with clay layers.		JAR	
30				9	Drive #4 30.0' to 31.5' Blows: 101	
32					Fishtail-Refusal	
34			SM-Gray, sand, dense, argillaceous, interbedded with clay layers. Clay Layers (CH) interbedded with sand. NOTE: Clay layers contain slickensided surfaces from 33.0' to 52.0'.	35	10	Pull #1 33.0' to 37.0' Run 4.0' Rec 1.4' CL 2.6'
36						
38				100	Pull #2 37.0' to 40.0' Run 3.0' Rec 3.0'	
40					BOX 1 JAR 11	
42				100		Pull #3 40.0' to 43.0' Run 3.0' Rec 3.0'
44					BOX 2	Pull #4 Continued


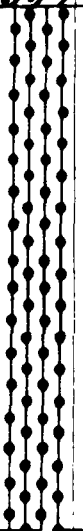
Continued on Sheet #4

214

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.			
PROJECT		INSTALLATION		SHEET			
Cooper River Rediversion		St. Stephen, S.C.		12			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, etc. depth, weathering, etc.)	
44.6			SM-Gray sand, dense, argillaceous, interbedded with clay layers (CH)-Clay layers from 33.0' to 52.0' slickensided.	63	BOX 1 JAR	Pull #4 43.0' to 46.0' Run 3.0' Rec 1.9' CL 1.1'	
46				60	12	Pull #5 46.0' to 49.0' Run 3.0' Rec 1.8' CL 1.2'	
48							
50				10	2	Pull #6 49.0' to 52.0' Run 3.0' Rec 0.6' CL 2.4'	
52					13		
54				47		Pull #7 52.0' to 55.0' Run 3.0' Rec 1.4' CL 1.6'	
56					14		
58				53		Pull #8 55.0' to 58.0' Run 3.0' Rec 1.6' CL 1.4'	
60					40	BOX 3	Pull #9 58.0' to 63.0' Run 5.0' Rec 2.0' CL 3.0'
			Sandstone seam at 59.0'				

Continued on Sheet #5

215

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.			
PROJECT		INSTALLATION		SHEET			
Cooper River Rediversion		St. Stephen, S.C.		5 OF 7 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
a	b	c	d	e	f	g	
	60		SM-Gray, sand, dense, argillaceous, interbedded with clay layers		15	Pull #9 Continued	
	62						
	64						Pull #10 63.0' to 68.0' Run 5.0' Rec 1.2' CL 3.8'
	66				22	BOX 3	
	68		SM-Gray sand, dense, saturated, Some lignitic-type fragments at 70.0'		16		
	70			90	17	Pull #11 68.0' to 71.0' Run 3.0' Rec 2.7' CL 0.3'	
	72						Pull #12 71.0' to 75.0' Run 4.0' Rec 3.6' CL 0.4'
	74			90	BOX 4		
	76				18	Pull #13 Continued	

Continued on Sheet #6

216

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 60.1		Hole No. 72		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 6 154 / 154		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV ERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water, etc. if significant)
76			SM-Gray sand, dense, saturated	100	BOX JAR	Pull #13 75.0' to 78.0' Run 3.0' Rec 3.0'
78				100	BOX 4	Pull #14 78.0' to 81.0' Run 3.0' Rec 3.0'
80				0	19	Pull #15 81.0' to 84.0' Run 3.0' Rec 0.0' CL 3.0'
82						
84			SM-Dark gray sand, dense, argillaceous, calcareous, with shell fragments.		20	Pull #16 84.0' to 88.5' Run 4.5' Rec 1.6' CL 2.9'
86				30		
88					BOX 5	
89.0			TOP OF ROCK 89.0'			
90			Sandstone-Gray, dense, argillaceous	90	WAX 1	Pull #17 88.5' to 93.5' Run 5.0' Rec 4.5' CL 0.5'
91.4			Shale-Dark gray, dense, fissile bedded, micaceous		WAX 2	
92			Sandstone seams at 91.4' and 93.3', 96.3' and 97.0'			

Continued on Sheet #7

217

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 60.1		Hole No. 72	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET OF 7 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	92		Shale-Dark gray, dense, fissile bedded, micaceous	100	BOX 5	Pull #17 Continued
	94				WAX 2	Pull #18 93.5' to 98.5' Run 5.0' Rec 5.0'
	96					
	98					
-38.4			BOTTOM OF HOLE 98.5'			


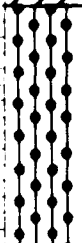
218.

DRILLING LOG		DIVISION South Atlantic	INSTALLATION St. Stephen, S.C.	SHEET 1 OF 5 SHEETS
1. PROJECT Cooper River Rediversion		10. SIZE AND TYPE OF BIT 4" Square Auger, 4X5" Core		
2. LOCATION (Coordinates or Station) Sta. 602+00 20' Left of Centerline		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME-75		
4. HOLE NO. (As shown on drawing title and file number) 73		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 15		
5. NAME OF DRILLER T.W. Smith		14. TOTAL NUMBER CORE BOXES 4		
6. DIRECTION OF HOLE X VERTICAL, Y MINED DEG. FROM VERT.		15. ELEVATION GROUND WATER 44.3'		
7. THICKNESS OF OVERBURDEN 73.3'		16. DATE HOLE 6 May 75		
8. DEPTH DRILLED INTO ROCK 1.7'		17. ELEVATION TOP OF HOLE 3.		
9. TOTAL DEPTH OF HOLE 75.0'		18. TOTAL CORE RECOVERY FOR BORING %		
19. SIGNATURE OF INSPECTOR Charles M. Deaver				

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ML-Silt, fine, Black, with some organic material		JAR BOX	4" Square Auger
			SM-Sand, Gray, silty, fine.		1	Drive #1 1.0' to 2.5' Blows: 61
			CL-Silty, clay, gray			Fishtail
			SC-Sandy clay, Tan and Red, with clay pockets		2	Drive #2 5.0' to 6.5' Blows: 23
						Fishtail
			SM-Sand, gray, dense, Argillaceous, interbedded clay layers		3	Drive #3 10.0' to 11.5' Blows: 8.3'
						Fishtail
			Continued on Sheet #2			
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.			
						BLows PER FOOT 219
						Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30".

DRILLING LOG (Cont Sheet)		ELEVATION (Feet)		Hole No. 73	
PROJECT		COOPER RIVER REDIVERSION		SHEET 2 OF 5 SHEETS	
ELEVATION	DEPTH	LEGEND	REMARKS	(Drilling time, water loss, depth of weathering, etc., if significant)	
12	12	SH. Sandstone	Fishtail		
14	14				
16	16		Drive #4	15.0' to 16.5'	
18	18		Blows: 146		
20	20		Fishtail		
22	22		Drive #5	20.0' to 20.8'	
24	24		Blows: 150/0.8'		
26	26		Pull #1	20.8' to 22.0'	
28	28		Run 1.2' Rec 0.2'		
			Rec 1.0'		
			Pull #2	22.0' to 26.0'	
			Run 4.0' Rec 3.4'		
			CL 0.6'		
			Pull #3	26.0' to 30.0'	
			Run 4.0' Rec 3.5'		
			CL 0.5'		

220

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 45.3		Hole No. 73			
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 3 OF 5 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORF RECOVER ERY	BOX OR SAMPLE NO JAR BOX	REMARKS (Drilling time, water, mud, etc., weathering, etc., if applicable)	
28.0			SM-Sand, gray, dense, Argillaceous, interbedded clay layers		1	Pull #3 Continued	
30.0					7		
32.0			Small sandstone seam at 31.0'				Pull #4 30.0' to 35.0' Run 5.0' Rec 4.5' CL 0.5'
34.0			Sandstone seam at 33.0'	90			
36.0			Sandstone seam at 35.0'			8	2
36.1			Sandstone seam at 36.1'				Pull #5 35.0' to 40.0' Run 5.0' Rec 4.0' CL 1.0'
38.0				80			
40.0							
42.0			SM-Sand, gray, dense, Argillaceous, with loose shell fragments, calcareous	14	3	Pull #6 40.0' to 45.0' Run 5.0' Rec 0.7' CL 4.3'	
44.0							
			Continued on Sheet #4				


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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 45.3		Hole No. 73		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 4 OF 5 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	BOX REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44		SM-Sand, gray, dense, Argillaceous, with shell fragments, calcareous			Pull #6 Continued
	46					Pull #7 45.0' to 50.0' Run 5.0' Rec 1.3' CL 3.7'
	48					
-05.2	50		SM-Sand, gray, wet, dense		10	Pull #8 50.0' to 55.0' Run 5.0' Rec 2.3' CL 2.7'
	52					3
	54				11	
	56					Pull #9 55.0' to 60.0' Run 5.0' Rec 2.2' CL 2.8'
	58					
	60				12	
			Continued on Sheet #5			

222


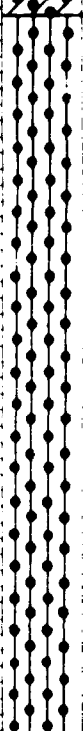




DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 45.3		Hole No. 73		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 5 OF 5 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY e	BOX OR SAMPLE NO JAR BOX	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant.)
60.0	60		SM-Sand, gray, dense, wet	72	3	Pull #10 60.0' to 65.0' Run 5.0' Rec 3.6' CL 1.4'
62	62					
64	64					
66	66		SM-Sand, gray, dense, argillaceous, interbedded clay seams, micaceous	48	13	Pull #11 65.0' to 70.0' Run 5.0' Rec 2.4' CL 2.6'
68	68					
-23.7	70					
72	72		Sandstone-Gray, dense, with clay-shale layers.	48	14	Pull #12 70.0' to 75.0' Run 5.0' Rec 2.4' CL 2.6'
-28.0	74					
75	75					
			BOTTOM OF HOLE 75.0'			

223

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 7 SHEETS		
1 PROJECT Cooper River Rediversion		South Atlantic	St. Stephen, S.C.	10 SIZE AND TYPE OF BIT 4" Square Auger & 4X5" Core		
2 LOCATION (Coordinates or Station) Station 602+00, 250' Right of Centerline			MSL	11 DATUM FOR ELEVATION SHOWN (TBM or MSL) BDI		
3 DRILLING AGENCY Savannah District			12 MANUFACTURER'S DESIGNATION OF DRILL CME-75			
4 HOLE NO. (As shown on drawing title and file number) 74			13 TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN	14 Bags 17 Jars	UNDISTURBED 2 Wax	
5 NAME OF DRILLER T.W. Scott			14 TOTAL NUMBER CORE BOXES	1		
6 DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15 ELEVATION GROUND WATER	51.8'		
7 THICKNESS OF OVERBURDEN 87.7'			16 DATE HOLE	STARTED 6 April 75	COMPLETED 9 April 75	
8 DEPTH DRILLED INTO ROCK 5.3'			17 ELEVATION TOP OF HOLE	57.8'		
9 TOTAL DEPTH OF HOLE 93.0'			18 TOTAL CORE RECOVERY FOR BORING	67 %		
			19 SIGNATURE OF INSPECTOR	[Signature]		
ELEVATION ft. a	DEPTH ft. b	LEGEND c	CLASSIFICATION OF MATERIAL (Description)	NO. CORE RECOVERED d	BOX OR SAMPLE NO. e	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2		SC-Tan and Red sandy clay. Sand % increases with depth.	100	J-1	4" Square Auger 0.0' to 12.0' Pull #1 0.0' to 3.0' Run 3.0' Rec 3.0'
	4		100	B-1	Pull #2 3.0' to 6.0' Run 3.0' Rec 3.0' LAB CLASSIFICATION Spl. Elev. Class B-3 48.8'-51.8' SC B-6 33.8'-36.8' SC B-6&8 SM B-8 20.8'-26.8' CH	
	6		100	J-2		
	8		100	B-2	Pull #3 6.0' to 9.0' Run 3.0' Rec 3.0' LAB CLASSIFICATION Spl. Elev. Class B-13 0.2'-11.8' CH B-14 -20.0'-30.2' CH SC	
	10		100	B-3	Pull #4 Continued	
		Continued on Sheet #1			J-3	J-Jar Sample B-Bag Sample W-Waxed Sample

NOTE: The core was collected
in a container with the label
Soil Classification Code

224

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +57.8		Hole No. 74	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 2 OF 7 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
46.3	10.6		SC-Tan and Red, sandy clay, Sand % increases with depth	100		Pull #4 9.0' to 12.0' Run 3.0' Rec 3.0'
	11.5		SM-Tan and Red sand, moist		B-4	4X5 1/2" Core Barrel
	12					Pull #5 12.0' to 15.0' Run 3.0' Rec 0.0' CL 3.0'
	14			0.0		
	16			0.0		Pull #6 15.0' to 17.0' Run 2.0' Rec 0.0' CL 2.0'
	18					3" ID Splitspoon 17.0' to 20.0' Drive #1 Run 3.0' Blows: 71
	20		SC-Tan and Red clayey sand, with gravel	100	J-4 J-5 B-5	Pull #7 20.0' to 21.0' Run 1.0' Rec 1.0'
	22					Pull #8 21.0' to 24.0' Run 3.0' Rec 3.0'
			ML-Tan and Gray clay, Fissile bedded, Micaceous	100	J-6 J-7 B-6	
	24		SC-Tan and Red clayey sand.	100		Pull #9 24.0' to 25.0' Run 1.0' Rec 1.0'
			SC-Gray sandy clay, Micaceous	66		Pull #10 25.0' to 28.0' Continued
	26					

Continued on Sheet #3

225

DRILLING LOG (Cont Sheet)

Hole No. 74

PROJECT

Cooper River Rediversion

SHEET 3

OF 7 SHEETS

ELEVATION

DEPTH

LEGEND

SECTION AB

REMARKS

Drilling time, water loss, depth of
casing, etc. (if significant)

26 b

28

30

32

34

36

38

40

42

Section AB
Intermittent
casing

Intermittent
casing
Section AB

Pull #10
25.0' to 28.0'
Run 3.0' Rec 2.0'
CL 1.0'

Pull #11
28.0' to 31.0'
Run 3.0' Rec 2.0'
CL 1.0'

Pull #12
31.0' to 34.0'
Run 3.0' Rec 2.5'
CL 0.5'

Pull #13
34.0' to 37.0'
Run 3.0' Rec 2.0'
CL 1.0'

Pull #14
37.0' to 40.0'
Run 3.0' Rec 3.0'

Pull #15
40.0' to 43.0'
Run 3.0' Rec 3.0'

226

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. 74		
		+57.8				
Cooper River Rediversion		St. Stephen, S.C.		7 Sheets		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Including time taken to pull, weathering, etc.)
42.0			SM-Dark gray sand, dense, interbedded with CL- micaceous clay layer.	100	B-10	Pull #15 Continued
44.0			Sandstone seam at 44.0'	66	J-11	Pull #16 43.0' to 46.0' Run 3.0' Rec 2.0' CL 1.0'
46.0				100	B-11	Pull #17 46.0' to 49.0' Run 3.0' Rec 3.0'
48.0					J-12	Pull #18 49.0' to 52.0' Run 3.0' Rec 1.5' CL 1.5'
50.0			NOTE: Sand washing out reducing recovery.	50	J-13	Pull #19 52.0' to 55.0' Run 3.0' Rec 1.5' CL 1.5'
52.0				50		Pull #20 55.0' to 58.0' Run 3.0' Rec 2.0' CL 1.0'
54.0				66	B-12	
56.0						
58.0						
Continued on Sheet #5						227

DRILLING LOG (Cont Sheet 1)

Well No. 1

Cooper River Re.

ELEVATION DEPTH LOGS

58 b

60

62

64

66

68

70

72

60 ft

64 ft

68 ft

72 ft





70 ft

74 ft

78 ft

82 ft

2002

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE +57.8		Hole No. 74	
PROJECT Cooper River Rediversion			INSTALLATION St. Stephen, S.C.		SHEET 7 OF 7 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water, mud, etc., weathering, etc., if applicable)
	74.6		SM-Dark Gray sand, dense, saturated, micaceous.	0.0		Pull #24 Continued
	76			0.0		Pull #25 74.6' to 77.8' Run 3.2' Rec 0.0' CL 3.2'
	78				J-16	3" ID Splitspoon 100/0.7'
	80			0.0		Pull #26 78.5' to 81.5' Run 3.0' Rec 0.0' CL 3.0'
	82		SM-Dark gray sand, dense, with shell fragments, calcareous.	0.0		Pull #27 81.5' to 85.0' Run 3.5' Rec 0.0' CL 3.5'
	84				J-17	3" ID Splitspoon 50/0.1'
	86			100		Pull #28 85.1' to 88.0' Run 2.9' Rec 2.9'
-29.9	87.7		TOP OF ROCK 87.7'			
	88		Sandstone-Gray hard, Argillaceous		B-14	Pull #29 88.0' to 93.0' Run 5.0' Rec 5.0'
-31.0	88.8		Shale-Dark gray, fissile bedded, hard, dense.	100	BOX 1	
	90		Continued on Sheet #7			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		57.8		74		
Cooper River Rediversion		ST. Stephen, S.C.		SHEET 7 OF 7 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
90.6			Shale Dark gray, fissile			Drilling time water loss depth of weathering not significant
92				100	BOX 1	W-1 Pull #29 Continued
92.8			Sandstone layer at 92.5' to 92.8'			W-2





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DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		St. Stephen, S.C.		OF 3 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 4X5 1/2 Core Bit 5 1/2" Fishtail			
2. LOCATION (Coordinates or Station) Sta. 597+05, 75.0' Left of Centerline				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
3. DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL CME-75			
4. HOLE NO. (As shown on drawing title and file number) 75				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 3	
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES		6	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		40.0	
7. THICKNESS OF OVERBURDEN 82.0'				16. DATE HOLE		STARTED 12 May 75 COMPLETED 14 May 75	
8. DEPTH DRILLED INTO ROCK 43.0'				17. ELEVATION TOP OF HOLE		56.6	
9. TOTAL DEPTH OF HOLE 125.0'				18. TOTAL CORE RECOVERY FOR BORING		90.4 %	
				19. SIGNATURE OF INSPECTOR Charles M. Deaver			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
80			OVERBURDEN			NOTE: Used fishtail bit from 0.0' to 82.0'	
82			TOP OF ROCK 82.0'				
84			Sandstone-Dark gray, hard, dense, argillaceous Clay Shale layer from 82.8' to 83.1'	100	BOX 1	Pull #1 82.0' to 85.0' Run 3.0' Rec 3.0'	
86			Shale-Dark gray, sandy, with some slickensides, micaceous	100	BOX 1	Pull #2 85.0' to 90.0' Run 5.0' Rec 5.0'	
90			Shale-Dark gray, dense, hard, fissile bedded, micaceous	100	BOX 2	W.T. 16.6' Date 19 May 75 Depth to water during drilling	
92			Continued on Sheet #2 NOTE: Soils field classified in accordance with the Unified Soil Classification System.			Pull #3 90.0' to 95.0' Run 5.0' Rec 5.0'	

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, S.C.		2		
				OF 3 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
92			Shale-Dark gray, dense, hard, fissile bedded, micaceous			Pull #3 Continued
94					BOX 2	WAX 2
96						Pull #4 95.0' to 100.0' Run 5.0' Rec 5.0'
98			Limestone-Gray, hard, fossiliferous	100		WAX 3
100					BOX 3	
102				100		Pull #5 100.0' to 105.0' Run 5.0' Rec 5.0'
104					BOX 3	
106				100		Pull #6 105.0' to 110.0' Run 5.0' Rec 5.0'
108			Continued on Sheet #3			

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.			
PROJECT		INSTALLATION		SHEET			
Cooper River Rediversion		St. Stephen, S.C.		OF 3 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth, weathering, etc. if significant)	
108			Limestone-Gray, hard, fossiliferous	100	BOX 4	Pull #6 Continued	
110						100	Pull #7 110.0' to 115.0' Run 5.0' Rec 5.0'
112							
114			(SM) Sand, gray, argillaceous, calcareous, micaceous Limestone remnant at 114.5'. Calcareous sandstone layer from 115.0' to 116.0'.	32	BOX 5	Pull #8 115.0' to 120.0' Run 5.0' Rec 1.6' CL 3.4'	
116							
118							
120			Limestone-Gray, hard, fossiliferous	86	BOX 6	Pull #9 120.0' to 125.0' Run 5.0' Rec 4.3' CL 0.7'	
122							
124			SC-Clayey sand, gray, calcareous, argillaceous Limestone seam from 124.4' to 124.8'				
125			BOTTOM OF HOLE 125.0'				

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Hole No. 76

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 3 SHEETS	
1. PROJECT Cooper River Rediversion		South Atlantic		St. Stephen, S.C.		10. SIZE AND TYPE OF BIT 4X5 1/2 Core Bbl & 6" Fishtail	
2. LOCATION (Coordinates or Station) Sta. -600+20, 75' Right of Centerline				MSL		11. DAYUM FOR ELEVATION SHOWN (FSM or MSL)	
3. DRILLING AGENCY Savannah District				CME-75		12. MANUFACTURER'S DESIGNATION OF DRILL	
4. HOLE NO. (As shown on drawing title and file number) 76				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED UNDISTURBED 3	
5. NAME OF DRILLER T.W. Scott				14. TOTAL NUMBER CORE BOXES 6		15. ELEVATION GROUND WATER 45.6	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE STARTED 15 May 75		COMPLETED 17 May 75	
7. THICKNESS OF OVERBURDEN 72.5'				17. ELEVATION TOP OF HOLE 45.6			
8. DEPTH DRILLED INTO ROCK 40.5'				18. TOTAL CORE RECOVERY FOR BORING 100 %			
9. TOTAL DEPTH OF HOLE 113.0'				19. SIGNATURE OF INSPECTOR Charles M. Deaver			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
49.6	b	c	d	e	f	g	
			OVERBURDEN			NOTE: Used fishtail bit from 0.0' to 70.5'.	
70						Pull #1 70.5' to 75.5' Run 5.0' Rec 5.0'	
72			TOP OF ROCK 72.5'				
-26.9			Sandstone-Dark gray, dense, calcareous, interbedded with dense clayey shale with fine sand seams, micaceous. Shell fragments to 74.5'	100			
74							
76					BOX 1	Pull #2 75.5' to 80.5' Run 5.0' Rec 4.0' CL 1.0'	
78				80	WAX 1	W.T. Ground Surface	
80						Date 20 May 75 Depth to water during drilling	
Continued on Sheet #2							

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 45.6		Hole No. 76		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 2 OF 3 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Dip, time, water, etc.)
	80 ^h		Sandstone-Dark gray, dense, calcareous, interbedded with dense clayey shale with fine sand seams, micaceous		BOX 1	Pull #2 Continued
	82		Shale-Dark gray, hard, dense, fissile bedded, micaceous	125		Pull #3 80.5' to 84.5' Run 4.0' Rec 5.0' CG 1.0'
	84				BOX 2	
	86				WAX 2	Pull #4 84.5' to 89.0' Run 4.5' Rec 4.5'
	88		Limestone-Gray, hard, fossiliferous, "Honey-Comb"	100	WAX 3	
	90				BOX 3	Pull #5 89.0' to 94.0' Run 5.0' Rec 5.0'
	92			100		
	94				BOX 4	Pull #6 94.0' to 99.0' Run 5.0' Rec 4.0' CL 1.0'
	96			80		

Continued on Sheet #3

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 45.6		Hole No. 76		
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, S.C.		SHEET 3 OF 3 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	96b		Limestone-Gray, hard, fossiliferous			Pull #6 Continued
	98			80	BOX 4	
	100					Pull #7 99.0' to 103.0' Run 4.0' Rec 5.0' CG 1.0'
	102			125		
-97.2			SM-Sand, gray, calcareous, argillaceous Limestone layer from 103.6' to 104.2'.			Pull #8 103.0' to 108.0' Run 5.0' Rec 5.0'
	104				BOX 5	
	106			100		
	108					Pull #9 108.0' to 113.0' Run 5.0' Rec 5.0'
-93.7			Limestone-Gray, hard, fossiliferous			
	110			100	BOX 6	
	112					
-90.0			SM-Sand, gray, calcareous, with shell fragments			
-87.0	113		BOTTOM OF HOLE 113.0'			

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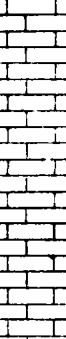




Hole No. 77

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
PROJECT		South Atlantic		St. Stephen, South Carolina		OF 4 SHEETS	
COOPER RIVER REDIVERSION		10. SIZE AND TYPE OF BIT		4x5 1/4" Core Barrel & 6" Fish-tail			
LOCATION (Coordinates or Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		MSL			
Sta. 598+60, 162' Right of Centerline		12. MANUFACTURER'S DESIGNATION OF DRILL		CME-75			
DRILLING AGENCY		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED		UNDISTURBED	
Savannah District		None					
HOLE NO. (As shown on drawing title and file number)		77		14. TOTAL NUMBER CORE BOXES		6	
NAME OF DRILLER		I.W. Scott		15. ELEVATION GROUND WATER		48.0'	
DIRECTION OF HOLE		16. DATE HOLE		STARTED		COMPLETED	
VERTICAL <input type="checkbox"/> INCLINED <input type="checkbox"/> DEG. FROM VERT.		21 May 1975		22 May 1975			
THICKNESS OF OVERBURDEN		75.3'		17. ELEVATION TOP OF HOLE		48.0'	
DEPTH DRILLED INTO ROCK		43.4'		18. TOTAL CORE RECOVERY FOR BORING		86.6'	
TOTAL DEPTH OF HOLE		118.7'		19. SIGNATURE OF INSPECTOR		Charles M. Deaver	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
			OVERBURDEN			NOTE: Fishtail Bit Used From 0.0' to 75.3'	
	75		Top of Rock 75.3'				
	76		Sandstone- Dark Gray, Argillaceous, Dense, Loose Shells, Soft Clay Seams at 76.8' and 77.3'	100	Box 1	Pull 1 75.3' to 75.7' Run- 0.4' Rec- 0.4'	
-30.0	78		Shale- Dark Gray, Sandy, Micaceous, Sand Seams at 79.3', 80.6', 81.0', 83.0', and 84.0'	100		Pull 2 75.7' to 80.7' Run- 5.0' Rec- 5.0'	
	80						
	82			100		Pull 3 80.7' to 85.7' Run- 5.0' Rec- 5.0'	
	84		Fissile Bedded, Joint Break at 84.7', Sandstone Seam at 85.3', Some Slickensides				
35.2	86		CONTINUED ON SHEET #2				

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, South Carolina		2 OF 4 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	86	c	d			
	88		Shale- Dark Gray, Fissile Bedded	100	Box 2	Pull 4 85.7' to 90.7' Run- 5.0' Rec- 5.0'
	90					
	92		limestone- Gray, Hard, "Coquina", Fossiliferous Glaucinitic Seams at 91.0', 91.3', 91.6', and 91.8'	92		Pull 5 90.7' to 95.7' Run- 5.0' Rec- 4.8' CI- 0.2'
	94					
	96				Box 3	
	98			88		Pull 6 95.7' to 100.7' Run- 5.0' Rec- 4.4' CI- 0.6'
	100					
	102			100		Pull 7 100.7' to 103.7'
CONTINUED ON SHEET 13						

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET		
Cooper River Rediversion		St. Stephen, South Carolina		3		
				OF 4 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	102		Limestone- Gray, Hard, Fossiliferous	123	Box 4	Pull 7, Continued 100.7' to 103.7' Run- 3.0' Rec- 3.7', CG- 0.7'
	104					
	106					
-58.4			Gray, Sandy, Dense			Pull 8 103.7' to 108.7' Run- 5.0' Rec- 4.5' CI- 0.5'
-59.4						
	108		SM- Sand, Gray, Calcareous		Box 5	
	110					
	112					
-65.5			Sandstone- Gray, Calcareous, Dense		Box 6	
-66.3	114					
-67.2			Limestone- Gray, Fossil- iferous		56	Pull 10 113.7' to 118.7' Run- 5.0' Rec- 2.8' CI- 2.2'
	116		SM- Sand, Gray, Calcareous, Loose Shells, Sandstone Seam at 116.3'			
	118					

---CONTINUED ON SHEET #4---

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 48.0'		Hole No. 77	
PROJECT Cooper River Rediversion		INSTALLATION St. Stephen, South Carolina		SHEET 4 OF 4 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS <i>Description</i>	% CORE RECOVERY	BOX OR SAMPLE NO.
118			SM- Sand, Gray, Calcareous Loose Shells		
REMARKS (Drilling time, water loss, depth of weathering, etc., if available)					
Pull 10, Continued					
BOTTOM OF HOLE 118.7'					

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DRILLING LOG		DIVISION South Atlantic		INSTALLATION St. Stephens		SHEET OF SHEETS	
PROJECT Cooper River Powerhouse				10. SIZE AND TYPE OF BIT 4 x 5" Core Bbl			
LOCATION (Coordinates or Station) STA 597+50 35'R				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
DRILLING AGENCY Savannah District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 3140			
HOLE NO. (As shown on drawing title and file number) 78				13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: WAX 50, JARS 34			
NAME OF DRILLER Gerty Parden				14. TOTAL NUMBER CORE BOXES 21			
DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 50.5'			
THICKNESS OF OVERBURDEN 79.2'				16. DATE HOLE STARTED 28 July 75 COMPLETED 10 Aug 75			
DEPTH DRILLED INTO ROCK 175.2'				17. ELEVATION TOP OF HOLE 54.3'			
TOTAL DEPTH OF HOLE 254.2'				18. TOTAL CORE RECOVERY FOR BORING %			
				19. SIGNATURE OF INSPECTOR L. P. COLE & C. DAVIS			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			OVERBURDEN consisting of clayey silty sands and stratified sands silts and clay. FISHTAILED TO 78.2' Date Depth to Groundwater 31 July 75 3.5' 3 Aug 75 3.7' 4 Aug 75 3.7' 5 Aug 75 3.7' 6 Aug 75 3.6' 8 Aug 75 3.8'			SET 4" x 5" core barrel casing to 50.5' core barrel long up under casing, piped all in casing - used drilling mud to maintain open hole - flow cuttings. Below 78.2' cored rock and unconsolidated materials w/ series M barrel 4x5" discharge bit and Denison Sampler Wax 1, wax 2 indicates sections of core preserved w/wax. 1-1, 1-2, 1-3, 1-4 Denison sample Pull 1 FM 78.2' to 81.6' Run 3.7' Rec 3.5'	
	80		SAND dark grey, f, w/shell frags, limey, trace silt SP-SM	MC 32.4	Jar 1		
			SANDSTONE argillaceous, shaly, m-f grained, compact-partly cemented w/limey cement, hard cap w/lenses clay 79.2'-79.6' moderately soft clay shale w/lenses m-f sand 79.6'- 79.8' & 81.5' - 81.7'	95 MC 15%	Wax 1		
				MC 40.2	Jar 2	NOTE: Wax #1, 1-2, 1-3, 1-4 Lab classification (ML)	
				LPO.7	Jar 3		

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE
54.3'

Hole No. 78

PROJECT


Cooper River Powerhouse

District

Sheet 2
of 12 sheets

ELEVATION	DEPTH	RECEIPT	DESCRIPTION	REMARKS
			SHALE dark gray, sandy, soft, fine grained, compact, fissile, weathering to a well developed, silty, & glauconitic, sandstone, decomposed below 80'.	Pull 1 FM 51.4' to 52.4' Run 1.5' Rec 1.0'
	84			Pull 3 FM 83.4' to 86.4' Run 3.0' Rec 3.0'
	86			
	88	88.1'	88.2'	Pull 4 FM 86.4' to 89.4' Run 3.0' Rec 3.0'
-35.7	90		SHALE dark gray, sandy, compact, fissile, weathering to soft clay shale; sandstone, Parting, slightly waxy, sandstone, contact at 94.6', sandstone, cap on limestone, encountered, contact at 94.6'.	Pull 5 FM 89.4' to 92.4' Run 3.0' Rec 0.7' Loss recovered in following run
	92			Pull 6 FM 92.4' to 94.6' Run 2.2' Rec 1.5'
	94			
-40.3				Pull 7 FM 94.6' to 97.6' Run 3.1' Rec 3.1'
	96			
	98			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 54.3'	Hole No. 78		
PROJECT Cooper River Powerhouse		INSTALLATION Philadelphia District		SHEET 3 OF 12 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	100		94.6' - 95.6' hard, dense, well cemented 95.6' - 104.1' moderately hard- moderately soft, honeycombed, very shelly and fossiliferous broken zones @ 98.6'-99.2' & 99.7'-100.7'	100		Pull 8 FM 97.7' to 100.7' Run 3.0' Rec 2.5' Loss recovered in following run
	102			100		Pull 9 FM 100.7' to 104.8' Run 4.1' Rec 4.1'
	104		104.1'-110.2' partly cemented coquina shells in a quartz sand-limey matrix, friable	100	Wax 12	BOX 4
	106			100	Wax 13	
	108			100	Wax 14	Pull 10 FM 104.8' to 107.8' Run 3.0' Rec 3.0'
	110			100	Wax 15	
	112			100	Wax 16	Pull 11 FM 107.8' to 110.2' Run 2.4' Rec 3.5'
	114			100	Wax 17	Pull 12 FM 110.2; to 112.9' Run 2.7' Rec 2.7'
-58.4			SAND	MC		BOX 6
				31.1	Jar 6	

Continued on Sheet 4

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.3'		Hole No. 78				
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District		SHEET 4 OF 12 SHEETS			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) BOX g		
-59.7			SAND (NO. 1) buff to grey, f-m subangular subrounded quartz, trace shells, trace-some silt SP-SM to SM	96 MC 26.3	Jar 7	Pull 13 FM 112.9' to 115.3' Run 2.4' Rec 2.3'		
	116				MC 28.5 100	U-1	FM 115.3' to 117.0' Run 1.7' Rec 1.7'	
-62.7					MC-27.3%	Jar U-1	LAB Classification U-1 SM	
			LIMESTONE (NO. 2) grey fossiliferous, hard & well cemented to loose & broken shelly limestone interbedded with zones: compact f-m quartz sands, sandstone & clay shale.	28.9 MC 16.5%	Jar 8 Wax 18	Pull 14 FM 117.0' to 120.1' Run 3.1' Rec 2.7'		
	118				87		LAB Classification for blended Spl. 117.5' to 119.2' (SM)	
	120			117.0' to 117.2' broken limestone 117.2' - 117.5' SAND f (SP-SM) 117.5' - 119.8' Limestone, hard- 118.7', ptly broken - 119.8' 119.8' - 120.3' SAND & LIME- STONE fragments	LP1.2 25.9	Jar 9	Pull 15 FM 120.1' to 122.9' Run 2.8' Rec 1.5'	
	122			120.3' - 120.7' LIMESTONE hard 120.7' - 121.0' SHELL fragments & f-m sand 121.0' - 121.4' LIMESTONE 121.4' - 123.8' SAND f-m quartz, shelly	54			
	124			123.8' - 124.6' LIMESTONE hard vuggy	98		Pull 16 FM 122.9' to 126.0' Run 3.1' Rec 3.0'	
				124.6' - 128.5' SAND f-m qtz, c-f shell, silty (SM)	MC 22.0	Jar 10		
	126				126.0' - 128.5' some silt & clay (SM-SC)	MC 20.9	Jar 11	Pull 17 FM 126.0' to 128.5' Run 2.5' Run 2.5'
	128				NOTE: Blended Lab sample Classifies as SC.	100 MC PL1.2	Jar 12	
	130				128.5' - 130.6' LIMESTONE hard, fossiliferous	100	Wax 19	Pull 18 FM 128.5' to 131.5' Run 3.0' Rec 2.9' Recovered loss in next run
CONTINUED ON PAGE 5								
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CONTINUED ON PAGE 5

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District			SHEET 5 OF 12 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g	
			130.6'-131.1' SAND c-f qtz, shelly (SP-SM)	MC 8.9%	Jar 13	BOX 8	Pull #18 Continued
			131.1'-131.5' LIMESTONE hard	MC=19.7%	Jar 14		
			131.5'-131.8' SANDSTONE hard f grained	MC=19.7%	Jar 15		
	132		131.8'-138.5' SAND f-m quartz trace to some shell, some thin shale layers; 133.0'- 138.5', few thin lenses & layers clay & silt (SP W/ SM & SC)	MC 29.7% 100	Jar 14 Jar 15	BOX 8	Pull 19 FM 131.5' to 133.5' Run 2.0' Rec 2.8'
	134			MC 28.0	Jar 15		Pull 20 FM 133.5' to 134.8' Run 1.3' Rec 0.8'
	136		NOTE: 134.8'-137.0', 1.6' loss, sand washes away when penetrating hard layers.	62 MC 26.7	Jar 16		
				MC 26.2	Jar 17		Pull 21 FM 134.8' to 137.0' Run 2.2' Rec 0.6'
			NOTE: Blended Spl. 138.5'- 139.1'. LAB Classifies as (SM)(SP)	MC=24.4 93	U-2		FM 137.0' to 138.5' Run 1.5' Rec 1.4'
-83.7	138		138.5'-139.1' SANDSTONE hard limey, honeycombed	MC 24.1%			Pull 22 FM 138.5' to 141.3' Run 2.8' Rec 2.5'
			139.1'-140.2' SAND f-m qtz shelly, silty SM	89 MC	Wax 20		
	140		140.2'-141.0' LIMESTONE hard	MC 13.1%			
			141.0'-142.0' CLAY-SHALE sandy, well consolidated	LPI 1.0			
	142		SAND (NO. 2) Compact f-vf qtz, grey-dark grey trace shells, silty (SM)	77	Wax 21	BOX 9	Pull 23 FM 141.3' to 144.8' Run 3.5' Rec 2.7'
	144			MC 30.9	Jar 18		NOTE: LAB Classifi- cation: Jar 18-SM, Jar 19-SM, Jar 20-SM
				LPI 1.1			
	146			21			Pull 24 FM 144.0' to 146.7' Run 1.9' Rec 0.4'

CONTINUED ON PAGE 6

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse		INSTALLATION Philadelphia District		SHEET 6 OF 12 SHEETS		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f BOX	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	148		Jar 19 fine silty clayey sand (SM-SC)	MC=34.9 88	Jar 19	Pull 25 FM 146.7' to 150.7' Run 4.0' Rec 3.4'
	150			MC=	Jar 20	LAB CLASSIFICATION Sample No. U-3 98.4' (-98.5) SM U-5 98.5' (-100.3) SM U-3 98.0' (-98.5) ML
	152		Bottom of U-3, f sandy, silt (ML)	MC 33.1 29.7% 100	U-3 Jar U-3	FM 150.7' to 152.8' Run 2.1' Rec 2.1'
	154		Cemented zone bottom U-4	MC 28.4 89	U-4 Jar U-4	FM 152.8' to 154.6' Run 1.8' Rec 1.6'
	156			MC 28.6% 76	U-5 Jar U-5	FM 154.6' to 156.7' Run 2.1' Rec 1.6'
-102.7	158		SHALE (NO.2) grey massive, mod soft f sandy compaction shale interbedded w/ zones: sandstone, argillaceous shelly limestone, compact silt & f silty quartz sands, 157.0'-162.5' soft-mod hard, sandy (near 50%) w/silt & silty sand partings, fissility absent or poorly developed.	MC 32.3 100	U-6 Jar U-6	FM 156.7' to 159.2' Run 2.5' Rec 2.5'
	160			MC 40.4 100	U-7 Jar U-7	FM 156.7' to 161.1' Run 1.9' Rec 1.9'
-107.7	162			MC 43.6% 21A		5 Aug 75 WL 3.7'
			CONTINUED ON PAGE 9			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District			SHEET 7 OF 12 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO f	BOX g	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) h
			162.5' - 163.6' SANDSTONE grey, f, hard, limey	100			PULL 26 FM 161.1' to 163.7' Run 2.6' Rec 2.6'
			163.6' - 163.7' sand f SP-SM	LPI.3	Wax 21B Jar 21		
164			163.7' - 174.5' SHALE dark grey, limey, compact, some silt & sand partings, moderately soft, easily scratched by fingernail, fissility not well developed	100		BOX 10	Pull 27 FM 163.7' to 166.7' Run 3.0' Rec 3.0'
166				MC=27 123.6	Jar 22		LAB CLASSIFICATION Wax 24 SM W/CH Pockets Wax 25 ML
				74 MC 29.0%	Wax 23 Jar 23		Pull 28 FM 166.7' to 170.1' Run 3.4' Rec 2.5'
168				MC 29.0%	Wax 24 Jar 24		
170			Blended sample from 169.3' LAB Classifies as (SM)	LPO.8	Wax 25	BOX 11	Pull 29 FM 170.1' to 173.1' Run 3.0' Rec 3.0'
				100 MC 27.8	Jar 24		
172			172.3' - 174.5' near 50% sand	LPI.2			
				100 MC 26.5	Jar 25 Wax 26		Pull 30 FM 173.1' to 176.1' Run 3.0' Rec 3.0'
174			174.5' - 177.3' LIMESTONE grey, hard-mod soft, fossiliferous, dense, argillaceous, shelly.	LPO.6			
176						BOX 12	Pull 31 FM 176.1' to 179.0' Run 2.9' Rec 2.9'
				MC 31.1	Jar 26 Wax 27		
178			177.3' - 186.3' SHALE dark grey, lenses & partings f-vf sand,				

Continued on page 8

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District			SHEET 8 OF 12 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			(Continued from page 7) compact-mod hard, slightly limey & glauconitic, fissility not well developed	MC 31.1 LP1.5	Jar27	Pull #31 Con't
	180			100	Wax 28	Pull 32 FM 179.0'to182.0' Run 3.0' Rec 3.0'
	182			LP3.0 100		Pull 33 FM182.0'to182.8' Run 0.8' Rec 0.8'
				LPO.8 100	Wax 29	Pull 34 FM182.8'to183.7' Run 0.9' Rec 0.9'
	184		183.7'-186.0' mod hard	MC=19.2% LPO.9	Jar28	
				100	Wax 30	Pull 35 FM 183.7' to 187.1' Run 3.4' Rec 3.4'
-131.7	186				Wax 31	
			186.3'-189.5' SAND grey, compact, vf, silty, some clay shale, crumbles easily (SM)	MC 25.3 MG 25.3	Jar 29 Jar30	Pull 36 FM 187.1'to189.8' Run 2.7' Rec 2.0'
	188			74	Wax 32	
				MC= 26.4% MC= 26.7%	Jar 31 Jar 32	
	190		189.5'-191.0' LIMESTONE grey, hard, dense shelly, sandy		Wax 33	Pull 37 FM189.8'to192.9' Run 3.1' Rec 3.1'
			191.0'to191.9' SILT f-sdy, compact, some shell	100	Wax 34	
	192		191.9'-193.4' LIMESTONE compact, argillaceous, shelly, weakly cemented	MC 104.0% 36.2 LPI.5	Jar 33	
					BOX 14	Pull 38 FM192.9'to196.0' Run 3.1' Rec 3.0'
	194		193.4'-195.9' CLAY SHALE mod soft, f.sandy, trace	MC 29.4	Jar 34	
			CONTINUED ON PAGE 4			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 53.4'		Hole No. 78	
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District			SHEET 9 OF 12 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			(Continued from page 8) shell fragments, slightly glauconitic	MC 30.1% 97	Wax 35	Continued from Page 8
	196		195.9' - 197.2' LIMESTONE hard, dense, silty	MC 28.8 LP1.5	Jar35	
			197.2'-199.7' CLAY SHALE grey, grades from mod hard to mod soft, f sandy, friable	MC 31.2 95	Wax 36 Jar36	Pull 39 FM196.0' to 200.0' Run 4.0' Rec 3.8'
	198				Wax 37	
			199.7'-200.8' LIMESTONE grey, hard, dense, silty	MC 32.3 LP1.5	Jar37	BOX 15
	200			63 LP0.4	Wax38	
			200.8'-206.3' SILT grey, com- pact, f sandy, (near 50%) slightly limey, few fossils, laminated, occasional thin layers clay. (ML)	87 MC 30.4%	Wax 39 40	Pull 40 FM200.0'to 200.8', Run 0.8'Rec 0.5'
	202			LP1.3		Pull 41 FM 200.8' to 203.8' Run 3.0' Rec 2.6' 200.8' Twisted rod off in hole
	204			100	U-8	FM 203.8'to205.6' Run 1.8' Rec 1.8'
			206.3' - 207.1' LIMESTONE hard f sandy, dense	MC 30.0 87	Jar U-8 Jar 37	Pull 42 FM 205.6to206.3' Run 0.7' Rec 0.6' Refusal on Denison
	206		207.1' - 209.3' SILT f sandy, slightly glauconitic ML	100		Pull 43 FM 206.3' to 209.4' Run 3.1' Rec 3.1'
	208				BOX 16	
			209.3' - 215.8' SAND f SM	LP1.8	Wax 41 Jar38	MC=30.3%
-155.7	210			MC 28.1	Jar 39	
CONTINUED ON PAGE 10						
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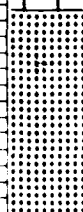


DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District		SHEET 10 OF 12 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant.) g
			(Continued from page 9) 209.3' - 215.8' SAND f-vf quartz, silty, slightly limey, some interfingering clay shale SM	87 MC 33.0%	Jar 40	BOX 16 Pull 44 FM 209.4' to 212.5' Run 3.1' Rec.
212				MC 32.7 100	Jar 41	Pull 45 FM 212.5' to 215.8' Run 3.3' Rec
214					Wax 42	LAB CLASSIFICATION WAX 42 CL WAX 43 ML JAR 40 ML
				LPO.6		BOX 17
216			215.8' - 221.6' SHALE dark grey, f-sandy w/lenses f-vf sand, consistency stiff sandy clayey silt, fissility not well developed.	MC= 32.9 67	Jar 43	Pull 46 FM 215.8' to 218.8' Run 3.0' Rec
218						
220				100	U-9	9 Aug 75 WL 4.3' FM 218.8' to 221.0' Run 2.2' Rec
				MC 28.3 MC 32.2%	Jar U-9 Wax 43	
222			222.1' - 226.5' SAND grey, f-vf quartz, silty, compact, friable, 223.5'-226.8' vy compact (SM)	MC 31.2 93	Jar 44	Pull 47 FM 221.0' to 224.0' Run 3.0' Rec
224				LPO.4	Wax 44	
				100	Wax 45	BOX 18 Pull 48 FM 224.0' to 227.3' Run 3.3' Rec
226						
			CONTINUED ON PAGE 11			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 54.3'		Hole No. 78	
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District		SHEET 11 OF 12 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
			SAND, Grey	MC		
			226.5' - 229.5' SHALE	51.6	Jar 45	Pull #48 Con't
			grey, compact, sandy friable, consistency f-vf SP-SM, few cemented layers to 0.2' fissility not well developed	LPI.4	Wax 46	
	228			100	BOX 18	Pull 49 FM 227.3' to 230.5' Run 3.2' Rec 3.2'
			229.5' - 231.1' SAND grey, f-vf qtz, silty, glauconitic, soft, 230.9' - 231.1' (SM)	MC 28.0	Jar 46	
	230					
			231.1' - 232.3' LIMESTONE hard, dense, fossiliferous, contact 20'	78	Wax 47	Pull 50 FM 230.5' to 234.5'
	232				Wax 48	BOX Run 4.0' 19 Rec 3.1'
-178.0			232.3' - 234.5' SAND grey, f-vf qtz, some silt, wet, quick 232.4' - 232.7'	MC 29.4	Jar 47	
				MC 21.5	Jar 48	
-179.7	234			LPO.9		
			LIMESTONE (No. 3), moderately hard, fossiliferous, numerous coquina shells, honeycomb texture, dense, hard layers @ 234.5' - 235.0'. 239.2' - 239.5' & 244.0' - 244.5' rough horizontal fractures spaced 0.3' - 0.6'	79	Wax 49 Wax 50 Wax 51	Pull 51 FM 234.5' to 237.8' Run 3.3' Rec 2.6'
	236			LPO.7	Wax 52	
	238			100	Wax 53 Wax 54	Pull 52 FM 237.8' to 241.1' Run 3.3' Rec 3.3'
	240			LPO.6		
				100	WAX 55	Pull 53 FM 241.1' to 244.5' Run 3.4' Rec 3.4'
	242				BOX 20	

CONTINUED ON PAGE 12

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 54.3'		Hole No. 78		
PROJECT Cooper River Powerhouse			INSTALLATION Philadelphia District			
SHEET 12 OF 12 SHEETS						
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-190.2	244		LIMESTONE (No. 3) Continued from page 11	LP1.0	WAX 56	Pull #53 Con't
	246		SAND (No. 3) grey, f-vf, subangular quartz, compact, some silt, trace mica (SM)	88	Jar 49	Pull 54 FM 244.5' to 247.8' Run 3.3' Rec 2.9'
	248			LPO.6	Jar 50	
	250				Jar 51	Pull 55 FM 274.8' to 251.0' Run 3.2' Rec 3.2'
-197.2	252		SANDSTONE f-vf, hard, limey	100	WAX 58	Pull 56 FM 251.0' to 251.9' Run 0.9' Rec 0.9'
-198.2	254				WAX 59	Pull 57 FM 251.9' to 254.5' Run 2.6' Rec 2.6'
-200.2			BOTTOM OF HOLE @ 254.5		JAR	

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COOPER RIVER REDIVERSION PROJECT
POWERHOUSE FOUNDATION ANALYSIS

SECTION 2

CHARLESTON DISTRICT CORE BORING FIELD LOGS

U.S. ARMY ENGINEERING DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FEBRUARY 1976

DRILLING LOG		INSTALLATION		SHEET	
PROJECT		10. SIZE AND TYPE OF BIT		11. DATE FOR ELEVATION SHEET	
1. LOCATION (coordinates or station)		12. MANUFACTURER'S DESIGNATION OF DRILL		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
2. DRILLING AGENCY		14. TOTAL NUMBER CORE BOXES		15. ELEVATION GROUND WATER	
3. NAME OF DRILLER		16. DATE HOLE		17. ELEVATION OF SURFACE	
4. HOLE NO. (As shown on drawing title and file number)		18. TOTAL CORE RECOVERY FOR BORING		19. SIGNATURE OF INSPECTOR	
5. SECTION OF HOLE		20. TOTAL CORE RECOVERY FOR BORING		21. SIGNATURE OF INSPECTOR	
6. DEPTH DRILLED INTO ROCK		22. TOTAL CORE RECOVERY FOR BORING		23. SIGNATURE OF INSPECTOR	
7. TOTAL DEPTH OF HOLE		24. TOTAL CORE RECOVERY FOR BORING		25. SIGNATURE OF INSPECTOR	
ELEVATION-DEPTH LEGEND	CLASSIFICATION OF MATERIALS (Description)	SCORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
10.0	SM-SC			6	
12.0	SM-SP Mixed colors but 1 clay lens 1' long			12	
18.0	Med. to fine mixed colors w/ small rock frags			18	
20.0	SM-SC			20	
22.0	SM-SC			22	
24.0	SM-SC			24	
26.0	SM-SC			26	
28.0	SM-SC			28	
30.0	SM-SC			30	
32.0	SM-SC			32	
34.0	SM-SC			34	
36.0	SM-SC			36	
38.0	SM-SC			38	
40.0	SM-SC			40	
42.0	SM-SC			42	
44.0	SM-SC			44	
46.0	SM-SC			46	
48.0	SM-SC			48	
50.0	SM-SC			50	
52.0	SM-SC			52	
54.0	SM-SC			54	
56.0	SM-SC			56	
58.0	SM-SC			58	
60.0	SM-SC			60	
62.0	SM-SC			62	
64.0	SM-SC			64	
66.0	SM-SC			66	
68.0	SM-SC			68	
70.0	SM-SC			70	
72.0	SM-SC			72	
74.0	SM-SC			74	
76.0	SM-SC			76	
78.0	SM-SC			78	
80.0	SM-SC			80	
82.0	SM-SC			82	
84.0	SM-SC			84	
86.0	SM-SC			86	
88.0	SM-SC			88	
90.0	SM-SC			90	
92.0	SM-SC			92	
94.0	SM-SC			94	
96.0	SM-SC			96	
98.0	SM-SC			98	
100.0	SM-SC			100	

DRILLING LOG		DIVISION	INSTALLATION
PROJECT		South Atlantic	Mobile
Cooper River Rediversion			
LOCATION (Coordinates or Station)			
MS 79 790 E2 324.730			
DRILLING AGENCY			
Mobile District			
HOLE NO. (As shown on drawing title and file number)			
NAME OF DRILLER			
Parden			
DIRECTION OF HOLE			
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <input type="checkbox"/> REG. HOLE VERT.			
THICKNESS OF OVERBURDEN			
DEPTH DRILLED INTO ROCK			
TOTAL DEPTH OF HOLE			
ELEVATION	DEPTH	LEGEND	
62.1'	0.0'		
63.0	5.0		
63.0	10.0		
48.0	20.0		
51.0	25.0		
58.0	30.0		

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

Hole No

Upper River Keliversion

Charleston S. 1

DATE SHEET

ELEVATION DEPTH LEGEND

CLASSIFICATION OF MATERIALS
(Description)

% CORE BOX OR
RECOV SAMPLE
TRY NO

REMARKS
(Drilling and testing logs)
(Weather, etc.)

8.0 40.0

Brown

Med to fine sand - Gray

Very dense - lt Gray

Bottom of hole
43.0'

255

Hole No. 11-10

DRILLING LOG		DIVISION	INSTALLATION	SHEET
		South Atlantic	Charleston District	OF SHEETS
1 PROJECT Cooper River Rediversion			10 SIZE AND TYPE OF BIT 1 3/4" DIA. 1 1/2" LONG	
2 LOCATION (Coordinates or Station) N 580, 680 E 2, 325, 190			11 CATON FOR ELEVATION SHOWN 1111.0	
3 DRILLING AGENCY Mobile District			12 MANUFACTURER'S DESIGNATION OF BIT Filling 310	
4 HOLE NO. (As shown on drawing title and file number) 11-10			13 TOTAL NO. OF CORES BORDEN SAMPLES TAKEN	
5 NAME OF DRILLER Parker			14 TOTAL NUMBER OF CORES	
6 DIRECTION OF HOLE VERTICAL			15 ELEVATION WITH CORE WATER	
7 THICKNESS OF OVERBURDEN 40.5			16 DATE HOLE	
8 DEPTH DRILLED INTO ROCK 20.0			17 ELEVATION TOP OF CORE	
9 TOTAL DEPTH OF HOLE			18 TOTAL CORE RECOVERY FOR TESTING	
			19 SIGNATURE OF DRILLER	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
a	b	c	d	e
58.7	0.0		SM - 2m	
53.7	5.0		SC - Colors are intermixed not layered - all material is clayey sand	
48.7	10.0		Water table 4.5 to 10.5	
			Colors are intermixed but not layered	
48.7	10.0		SM - water table 2.9.0 (6-9-75) coarse to med sand - Brown	
43.7	15.0			
38.7	20.0		Med. to fine sand with gray clay pockets - Brown with small gray pockets soil colors intermixed but not layered	
33.7	25.0		Med. to fine sand with gray clay pockets - Brown with small gray pockets soil colors intermixed but not layered	
28.7	30.0			

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 58.7		Hole No. IT-1B	
PROJECT Cooper River Rediversion			INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Med. to fine sand w/gray clay pockets (more sandy) Brown		6	Blows/FT 20
			SP-SM-more coarse Red Brown		7	16 18 28 27
23.7	35.0					
			Sm-coarse has a few layers of dark gray ch ranges @ 1/2" to 1/2" thick. Top of rock 40.5'		8	20 58
18.7	40.0					
			Limestone @ 18" thick-small sm layers @ 3" then sand & shale layers-sand & shale dk gray in color.			Pull 1 - 1 40.5 - 45.5 Run 5.0 Rec 2.6 C/L 2.4
13.7	45.0					
			SM-silty sand w/limestone fragments (ranges from small rocks to 1-2" layers)			Pull 1 - 2 45.5 - 50.5 Run 5.0 Rec 5.0 C/L 0.0
8.7	50.0					
			Silty sand - 1 piece sandstone @ 1 1/2" thick SM color mixed		Core Box 1	Pull 1 - 3 50.5 - 55.5 Run 5.0 Rec 4.7 C/L 0.3
3.7	55.0					
			Silty sand mixed-color bottom 6" dk gray CL			Pull 1 - 4 55.5 - 60.5 Run 5.0 Rec 4.7 C/L 0.3
-1.3	60.0					
-1.3	60.5					
			Bottom of hole 60.5'			

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Hole No. IT-2B

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
South Atlantic		Charleston District		OF1 SHEETS			
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" 11. Spitspoon & 4x5 1/2" Core Bbl			
2. LOCATION (Coordinates or Station) N 579, 870 E, 2 325, 130				12. LENGTH OF RUNS OF SEGMENT OF DRILL Failing 31'			
3. DRILLING AGENCY Mobile District				13. TOTAL P.C. OF CORES: UNDISTURBED - UNDISTURBED			
4. HOLE NO. (As shown on drawing title and file number) IT-2B				14. TOTAL NUMBER OF BOXES 0			
5. NAME OF DRILLER Parden				15. ELEVATION GROUND WATER 48.3			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT				16. DATE OF DRILL 18 Jun 75			
7. THICKNESS OF OVERBURDEN 28.5				17. ELEVATION TOP OF HOLE 54.8			
8. DEPTH DRILLED INTO ROCK				18. PERCENT CORE RECOVERY FOR BORING %			
9. TOTAL DEPTH OF HOLE 28.5							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIAL (Determined)	REMARKS Drilling time, water loss, depth of weathering, etc., if significant			
54.8	0.0		Top of hole	Blows FI			
			SC-texture through sample but not layered	20			
			Gray, black clay	22			
49.8	5.0			12			
			Gay to Black	10			
			Sm- Green	19			
44.3	10.0			Water table @ 6.5			
				12			
				11			
				20			
39.8	15.0		W/clay lense & rock fragments clay lense do not seams clay in pockets -	13			
				16			
				11			
34.8	20.0			13			
			Gray & Black	9			
				12			
				5			
29.8	25.0		W/clay lense & rock fragments (lime stone) seams range 1-2 ft interbedded	4			
				0			
26.3	28.5			0			
				22			
			Bottom of hole 28.5'	25B			

Hole No. IT-2B-1

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET OF 2 SHEETS	
PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 4x5 1/2"			
LOCATION (Coordinates or Station) N579.870 E2,325.135				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl			
DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
HOLE NO. (As shown on drawing title and title number) IT-2B-1				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 33	
NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES		1	
DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		54.8	
THICKNESS OF OVERBURDEN 46.5				16. DATE HOLE		2 Oct	
DEPTH DRILLED INTO ROCK 10.0				17. ELEVATION TOP OF HOLE		54.8	
TOTAL DEPTH OF HOLE 56.5				18. TOTAL CORE RECOVERY FOR BORING		%	
				19. SIGNATURE OF INSPECTOR Lawson			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
54.8	0.0		Top of Hole			Blows/Ft	
			SM - Tan to Black Highly Organic	MC 27.2%	1	Water Table @ Ground Level	
			CL - Tan to Gray		2	6	
			Mixed Colors		3	13	
49.8	5.0				4	12	
				MC 20.3%	5	11	
			SM - Black		6	5	
			Gray to white		7	LAB CLASSIFICATION 15	
44.8	10.0		Green, very fine sand		8	ELEV. CLASS	
					9	48.8 - 46.3 ML-CL 21	
					10	51.8 - 50.3 CH 15	
					11	46.3 - 44.3 SC-SM 20	
					12	42.8 - 39.8 SC 21	
39.8	15.0				13	40.3 - 27.8 SC 21	
					14	21.2 - 18.8 SC 18	
					15	52.8 - 48.8 CH 13	
					16	12	
34.8	20.0		Gray to Black W/Clay Binder		17	4	
			Very Fine Sand		18	5	
					19	2	
29.8	25.0			MC 42.7%	20	2	
					21	0	
			Gray - Silt W/Shale Fragments		22	1	
24.8	30.0				23	10	

Continue Pg. 2

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. IT-2B-1		
PROJECT		INSTALLATION		SHEET 2 OF 2 SHEETS		
Cooper River Rediversion		Charleston District				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			SM - Gray Silty Sand		24	
					25	3
					26	5
19.8	35.0		Sand w/Shale Fragments	MC 78.6%	27	1
					28	1
		• • •	SP-SM - w/Decomp. Limestone & Marble Gray		29	2
		• • •			30	
14.8	40.0	• • •			31	21
		• • •			32	114
			Refusal @ 41.5 Top of Rock			100+
9.8	45.0		No Recovery		Core Box 1	Pull - 1 41.5 - 51.5 Run 10.0 Rec 0.0 C/L 10.0
4.8	50.0					
			SM - Gray, Cemented Sand		33	25+
						100+
-1.7	56.5		w/Very Fine Sand			90+
			Bottom of Hole 56.5'			75+
<p>Note: From 41.5 to 52.5 No Recovery was obtained. Soil was cored by 4 x 5½ BBL from 41.5 to 51.5. Went back to splitspooning at 51.5. From 51.5 to 52.5 the splitspoon sank under weight of the hammer. A hard layer was hit from 52.5 to 53.5. The crew fishtailed to 55.0' and splitspooning was continued to 56.5 (Bottom of Hole).</p>						

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Hole No. IT-2C

DRILLING LOG		DIVISION	INSTALLATION	SHEET
PROJECT		South Atlantic	Charleston District	OF 1 SHEETS
LOCATION (Coordinates or Station)		10. SIZE AND TYPE OF BIT 1 3/8" ID Split spoon & 4x5" Core Bbl		
N 580, 210, E2, 324, 760		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
Mobile District		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		
HOLE NO. (As shown on drawing title and file number)		DISTURBED 6 UNDISTURBED -		
IT-2C		14. TOTAL NUMBER CORE BOXES 0		
NAME OF DRILLER		15. ELEVATION GROUND WATER 46.0'		
Parden		16. DATE HOLE STARTED 18 Jun 75 COMPLETED 18 Jun 75		
DIRECTION OF HOLE		17. ELEVATION TOP OF HOLE 58.0'		
VERTICAL <input checked="" type="checkbox"/> INCLINED <input type="checkbox"/> DEG. FROM VERT.		18. TOTAL CORE RECOVERY FOR BORING %		
THICKNESS OF OVERBURDEN 30.0'		19. SIGNATURE OF INSPECTOR C. Davis		
DEPTH DRILLED INTO ROCK 0				
TOTAL DEPTH OF HOLE 30.0'				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
58.0	0.0		Top of hole			Blows FT
53.0	5.0		SC-clayey (fine sand) - color mixed but not layered-clay binder mixed not layered Tan & Red		1	4
						5
						10
48.0	10.0		Red Tan		2	21
						24
						14
43.0	15.0		Clay & sand w/sand layers 1/8 to 1/2" thick-strong clay binder - Tan, Red & Brown		3	11
						12
						8
38.0	20.0		Fine and med color mixed not layered. Tan & Red		4	9
						8
						11
						10
						11
						12
						14
33.0	25.0		Med to fine w/small rocks frags & gravel		5	22
						28
						26
28.0	30.0		SM-silty fine w/clay pocket, approx 1/8 to 1/2" thick. Tan		6	31
			Bottom of hole 30.0'			

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Hole No. IT-2D

DRILLING LOG		DIVISION		INSTALLATION		SHEET 1	
1. PROJECT Cooper River Rediversion		South Atlantic		Charleston District		OF 1 SHEETS	
2. LOCATION (Coordinates or Station) N579 380 E2 324 710		3. DRILLING AGENCY Mobile District		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon & 4x5"		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core bbl	
4. HOLE NO. (As shown on drawing title and file number) IT-2D		5. NAME OF DRILLER Parden		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		13. TOTAL NO. OF OVER-RODDEN SAMPLES TAKEN 6	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT		7. THICKNESS OF OVERBURDEN 24.0'		14. TOTAL NUMBER CORE BOXES 1		15. ELEVATION GROUND WATER 52.0'	
8. DEPTH DRILLED INTO ROCK 5.0'		9. TOTAL DEPTH OF HOLE 29.0'		16. DATE HOLE STARTED 20 Jun 75		17. ELEVATION TOP OF HOLE 59.0	
				18. TOTAL CORE RECOVERY FOR BORING 42.0 %		19. SIGNATURE OF INSPECTOR C. Davis	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIAL (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
59.0	0.0		Top of Hole			Blows Ft	
			SC - Clayey Fine Sand - Colors Mixed but not Layered - Clay Binder Mixed not Layered Gray & Tan		1	6	
54.0	5.0		Tan		2	4	
						7	
49.0	10.0		Clayey Fine Sand Contains Small Focks & Rock Frags. Gray & Tan		3	14	
						14	
44.0	15.0				4	8	
						8	
39.0	20.0		SM - Silty Fine Sand W/Clay Layers @ 1/8" Thick		5	6	
						17	
35.0	24.0		SC-Calcareous Clayey Sand W/Limestone Decomposed, Clay Layers @ 1/8" to 1/4" Thick Gray		6	24	
34.0	25.0		Top of Rock			29	
			Limestone, Gray, variegated			7	
30.0	29.0					6	
						3	
						7	
						71	
						Pull - 1 24.0 - 29.0 Pop 5.0 Rec 2.1 C/L 2.9	
			Bottom of Hole			262	

DRILLING LOG		DIVISION		INSTALLATION		SHEET	
		South Atlantic		Charleston District		OF 2 SHEETS	
1. PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" 10 Splitpoint 4x1/2"			
2. LOCATION (Coordinates or Station) N579,720 E2,324,330				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core bbl			
3. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-2E				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 6 UNDISTURBED			
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 1			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 56.1			
7. THICKNESS OF OVERBURDEN 43.0				16. DATE HOLE STARTED 19 Jun 75 COMPLETED 19 Jun 75			
8. DEPTH DRILLED INTO ROCK 7.2				17. ELEVATION TOP OF HOLE 66.1			
9. TOTAL DEPTH OF HOLE 50.2				18. TOTAL CORE RECOVERY FOR BORING 27.8			
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
66.1	0.0		Top of Hole			Blows Ft	
			CL-Fine Sandy Clay - Tan		1	7	
						12	
61.1	5.0			Texture is uniform-Mixed Color - Color not Layered. Red & Tan		2	18
			Silty Clay W/Silt Layers about 1/2" Thick Average - Layers of CL & Silt, Alternate. Tan, Red & Gray.		3	24	
						18	
56.1	10.0						18
			SC-Clayey Fine and Med. Sand with Gravel - Tan		4	18	
						10	
51.1	15.0						8
			Clay Fine Sand and Clay Mixed, But not Layered Sand Tan, Clay Lt. Gray		5	9	
						7	
46.1	20.0						9
						10	
						7	
41.1	25.0						8
						9	
						7	
36.1	30.0						10

Continue on Sheet 2

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 66.1'		Hole No. IT-2E	
PROJECT Cooper River Rediversion			DISTRICT		SHEET 2 OF 2 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	% COR. RECON. LPS	BOX OR SAMPLE	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
35.1	31.0		Rock Fragments, Open Layer From 31.0 to 31.6			Top of Rock Pull - 1 Rec 0.3 31.0 - 33.3 C/L 2.0
			Limestone w/Sand Layer			Run 2.3
			Hard Limestone Gray			
31.1	35.0		Sandstone, calcareous with shale fragments.		Box 1	Pull - 2 33.3 - 38.3 Run 4.9 Loss 1.7 C/L 3.2
						Blow/Ft
26.1	40.0					47
						39
						48
21.1	45.0					41
						35
						46
						57
15.9	50.2					85
Bottom of Hole 50.2'						

264

Hole No. IT-3

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston District	SHEET OF 1 SHEETS
1. PROJECT Cooper River Rediversion			10. SIZE AND TYPE OF BIT 1 3/8" ID Splitpoint & 4x1/2"	
2. LOCATION (Coordinates or Station) N580,290 E2,324,230			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl MSL	
3. DRILLING AGENCY Mobile District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) IT-3			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 8 UNDISTURBED	
5. NAME OF DRILLER Garden			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE X VERTICAL INCLINED DEG. FROM VERT.			15. ELEVATION GROUND WATER 10.0'	
7. THICKNESS OF OVERBURDEN 24.0'			16. DATE HOLE STARTED 28 Mar 75 COMPLETED 28 Mar 75	
8. DEPTH DRILLED INTO ROCK 0			17. ELEVATION TOP OF HOLE 64.5	
9. TOTAL DEPTH OF HOLE 24.0'			18. TOTAL CORE RECOVERY FOR BORING	
			19. SIGNATURE OF INSPECTOR C. Davis	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
64.5	0.0		Top of Hole			
62.0	5.0		SC-Clayey Fine Sand - Tan		1	7
60.0	5.0		CL-Fine Sandy Clay - Red & Tan		2	10
			CH-Fat Clay- Red & Tan		3	15
54.0	10.0		MH-Silty Clay - Tan		4	15
50.0	15.0		SC - Clayey Fine Sand - Tan & Gray		5	22
44.0	20.0		SP-Gray - Coarse & Med. Sand W/Gravel		6	9
39.0	25.0		SM-Silty Fine Sand W/Thin Clay lenses - Tan		7	13
34.0	30.0		Continue on Sheet 2			16

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DRILLING LOG (Cont Sheet)

ELEVATION (FEET) OF HOLE

Hole No. 1T-3

SHEET 2
OF 2 SHEETS

PROJECT

Cooper River Rediversion

LOCATION

SECTION

REMARKS

drilling time, water loss, depth of penetration, etc. (if significant)

Blow/Ft

ELEVATION

DEPTH

LEGEND

a

b

c

Soil - Silty Clay (approx. 10 ft)

Gravelly Sand (approx. 10 ft)

46

35

19

14

11

10

12

72

12.5

29.5

35.0

24.5

40.0

21.0

43.5

Bottom of hole 45.0

266

DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET OF 4 SHEETS	
PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Splits 4x9"			
LOCATION (Coordinates or Station) N 87.020 E 2,318.490				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL			
1. DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) IT-10				13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 5			
5. NAME OF DRILLER Parden				14. TOTAL NUMBER CORE BOXES 4			
6. DIRECTION OF HOLE A VERTICAL INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 69.8			
7. THICKNESS OF OVERBURDEN 24.5				16. DATE HOLE 28 May 75			
8. DEPTH DRILLED INTO ROCK 22.1				17. ELEVATION TOP OF HOLE 73.8			
9. TOTAL DEPTH OF HOLE 46.6				18. TOTAL CORE RECOVERY FOR BORING 86.4			
				19. SIGNATURE OF INSPECTOR C. Davis			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVER- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
73.8	0.0		Top of Hole				Blows Ft
			SC-Clayey fine sand tan & gray		1		4
						6	
69.8	5.0						
			MH-Micaceous silty Clay		2		3
						4	
69.8	10.0						
			CH-Fat clay - gray		3		3
						4	
65.8	15.0						
			SC-Calcareous clayey sand with limestone - green & gray		4		4
						5	
61.8	20.0						
			Top of Rock 24.5'		5		13
						20	
57.8	24.5						
57.8	25.5		Limestone, light tan weather- ed, slightly sandy to clayey. Material appears to be re- worked. Erosional contact 26.4'		Core Box 1	Pull - 1 24.5 - 29.2 Run 4.7 Rec 4.7 C/I 0.0	
57.8	26.4						
			Limestone "coquina" well cemented hard				
Continue on Sheet 2							




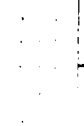

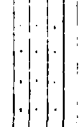

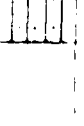
267

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No.		
PROJECT		INSTALLATION		SHEET 2		
Cooper River Rediversion		Charleston District		OF 2 SHEETS		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			Limestone, dark gray "coquina" well cemented hard			Pull - 2 29.2 - 33.6
			Clay-transition zone dark gray with shell fragments leached, consolidated		2	Run 4.4 Rec 4.4 C/L 0.0
43.8	35.0					
			Shale, dark gray with sand (SM) paper. Thin lamina to 3' tjocl beds. Some sand layers are partially cemented and some areas contain pockets of sand.		3	Pull - 3 33.6 - 38.6 Run 5.0 Rec 3.7 C/L 1.3
38.8	40.0					
			42.3 42.5 Sand Casts			Pull - 4 38.6 - 43.6 Run 5.0 Rec 4.0 C/L 1.0
33.8	45.0				4	Pull - 5 43.6 - 46.6 Rec 2.3 Run 3.0 C/L 0.7
32.2	46.6					
Bottom of Hole 46.6'						

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Hole No. 1-9

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Charleston, S.C. 11-11-61	SHEET OF 1 SHEETS
PROJECT River modification			10. SIZE AND TYPE OF BIT 3/4" ID Splitpoint 4x5 1/2"	
LOCATION (Coordinates or Station) Sta. 1+00			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bbl	
1. DRILLING AGENCY U.S. Army Corps of Engineers			12. MANUFACTURER'S DESIGNATION OF DRILL Selling 314	
4. HOLE NO. (As shown on drawing title and file number) 1-9			13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED <input type="checkbox"/> UNDISTURBED <input type="checkbox"/>	
5. NAME OF DRILLER			14. TOTAL NUMBER CORE BOXES 2	
6. DIRECTION OF HOLE VERTICAL <input checked="" type="checkbox"/> INCLINED <input type="checkbox"/> DEG. FROM VERT. _____			15. ELEVATION GROUND WATER 10.0	
7. THICKNESS OF OVERBURDEN 45.0'			16. DATE HOLE STARTED <input type="checkbox"/> COMPLETED <input type="checkbox"/>	
8. DEPTH DRILLED INTO ROCK 0'			17. ELEVATION TOP OF HOLE 10.0	
9. TOTAL DEPTH OF HOLE 45.0'			18. TOTAL CORE RECOVERY FOR BORING 100%	
			19. SIGNATURE OF INSPECTOR C. Davis	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Top of hole			
			OH-Clay Tan & Gray		1	
			OH-Silt & Mud and Gray & Tan		2	
			OH-Silt & Mud and Gray		3	
			Gray & Tan		4	
			OH-Silt & Mud and Gray		5	
			OH-Silt & Mud and Gray		6	
			OH-Silt & Mud and Gray		7	
			OH-Silt & Mud and Gray		8	

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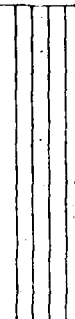
DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 25.2		Hole No. T-9	
PROJECT Cooper River Rediversion			INSTALLATION Charleston District		SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	SIX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-9.8	35				6	
-14.8	40					
-19.8	45					
			Bottom of Hole 45 ft			

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DRILLING LOG		DIVISION South Atlantic		INSTALLATION Charleston District		SHEET 1 OF 3 SHEETS	
PROJECT Cooper River Rediversion				10. SIZE AND TYPE OF BIT 1 3/8" ID Split Spoon 4 x 5 1/2"			
LOCATION (Coordinates or Station) N 581.500 E2, 326.580				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core B61			
DRILLING AGENCY Mobile District				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
HOLE NO. (As shown on drawing title) T-9A				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 9			
NAME OF DRILLER Roundtree P.				14. TOTAL NUMBER CORE BOXES 1			
DIRECTION OF HOLE X VERTICAL INCLINED _____ DEG FROM VERT.				15. ELEVATION GROUND WATER 45.2'			
THICKNESS OF OVERBURDEN 78.1'				16. DATE HOLE STARTED 12 Jun 75 COMPLETED 16 Jun 75			
DEPTH DRILLED INTO ROCK 0				17. ELEVATION TOP OF HOLE 55.7'			
TOTAL DEPTH OF HOLE 78.1'				18. TOTAL CORE RECOVERY FOR BORING 61.3'			
				19. SIGNATURE OF INSPECTOR R. Lawson			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
55.7	0.0		Top of Hole				
			SM-Dark Brown		1		6
							12
			SM-SC-More Coarse-Stiffer Brown		2		28
							61
			Red Brown				41
							42
	10.0		SC-Clay Binded (Coarse) Red- Brown - Small Amounts of Or- ganic Silts & Mica in Layers 2 1/8" Thick Wat. Table @ 10.5'		3	Water Table @ 10.5' 12 Jun 75	24
							19
			SM-Contains a Shell Fragment Brown & Lt. Gray		4		5
	15.0						5
			Lt. Gray, W/Approt. 1/2" Thick Layers of Clay Throughout				16
							42
	20.0						42
			Gray Clay Lenses & Rock Fragment		5	0.2/50 Blows Dense SM	23
							28
	25.0						28
			Shale and Clay Lenses Inter- bedded @ 1/2" Thick Gray		6		69
							74
	30.0						70
Continue on Sheet 2				271			

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 55.7		Hole No. T-9A		
PROJECT Cooper River Rediversion			INSTALLATION Charleston District		SHEET 2 OF 3 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					6	0.4/100 Blows 153
			Gray Sand and Shale Layers Shale Layers @ 1/8" Thick - Several Layers			83
20.7	35.0					68
						157
					7	
						66
15.7	40.0					77
			Gray			45
						153
					8	0.3/Blows-Dense SM Dk. Gray Clay Layers (Approx. 1/2) + Shale Clay Pockets.
10.7	45.0					105
						90
			Shale, gray, alternating layers of sandstone included. Sandstone of light color, soft to moderately hard, with depth becomes 1/8 inch lamina. Shale is black and fissile			Pull - 1 44.6' - 49.6 Run 5.0 Rec 4.6 C/L 0.4
5.7	50.0					
						Pull - 2 49.6 - 53.1 Run 3.5 Rec 3.2 C/L 0.3
0.7	55.0				Core Box 1	Pull - 3 53.1 - 58.1 Run 5.0 Rec 2.0 C/L 3.0
						Pull - 4 58.1 - 63.1 Run 5.0 Rec 0.0 C/L 5.0'
-4.3	60.0					
			Gray to Dark, Gray SM, Colors Mixed Not Layered SM-SP gray, poorly sorted with clay lamina			Pull - 5 63.1 - 68.1 Run 5.0 Rec 3.6 C/L 1.4
-9.3	65.0					
-14.3	70.0					
Continue on Sheet 3						

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DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE		Hole No.	
PROJECT			INSTALLATION		DATE	
Cooper River Rediversion			Charleston District		1-10-11	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS <i>(Drilling time, water, etc., water weathering, etc., if applicable)</i>
a	b	c	d	e	f	g
-14.5	70.0					Pull #5 Con't
-19.5	75.0					Pull - 6 68.1 - 73.1 Run 5.0 Rec 3.6 C/L 1.4
-22.4	78.1					Pull - 7 73.1 - 78.1 Run 5.0 Rec 3.5 C/L 1.5'
Bottom of Hole 78.1'						

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COOPER RIVER REDIVERSION PROJECT
POWERHOUSE FOUNDATION ANALYSIS

SECTION 3

PHILADELPHIA DISTRICT CORE BORING SUPPLEMENTARY LOGS

U.S.ARMY ENGINEERING DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FEBRUARY 1976

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 52

GROUND ELEVATION 52.8

LOCATION: Station 597+20 75' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	0 to 1	52.8 to 51.8	Sand, Dark grey, fine, quartz some silt SM
Jar 2	2 to 3	50.8 to 49.8	Sand, Light grey, fine-coarse quartz, some silt. SM
Jar 3	3 to 4	49.8 to 48.8	Sand, Light grey, fine-coarse quartz, some clay, SC
Jar 4	4 to 5	48.8 to 47.8	Sand, light grey, fine-coarse quartz, some clay, SC
Jar 5	5 to 6	47.8 to 46.8	Sand, light grey, fine-coarse quartz, some clay SC
Jar 6	7 to 8	45.8 to 44.8	Sand, light grey, fine-medium quartz, trace silt and clay SP-SC
Jar 7	8 to 9	44.8 to 43.8	Sand, tan-orange brown, fine- medium quartz, trace silty clay, SP-SC
Jar 8	11 to 12	41.8 to 40.8	Sand, tan & grey, fine-medium quartz, some clay SC
Jar 9	14 to 15	38.8 to 37.8	Clay-sand, mixture dark grey clay and light grey fine quartz sand, layers to 1/4", clay layers 70% CL
Jar 10	18 to 19	34.8 to 33.8	Sand Clay mixture gray fine- medium quartz sand and dark grey clay layers to 1/4" sand layers 60% SP & CL
Jar 11	20.0 to 20.5	32.8 to 32.3	Sand -light grey fine to medium quartz with a trace of silt and dark grey clay layers - 1", sand 70% SP-SM

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 52.8

HOLE NO.52

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 11	20 to 20.5	32.8 to 32.3	Sand, light grey fine to medium quartz with a trace of silt and dark grey clay layers - 1" sand 70% SP-SM
Jar 12	22.0 to 23.0	30.8 to 29.8	Sand, tan and grey fine to medium quartz, some paper thin layers clay, sand 80%, SP-SC
Jar 13	23.0 to 24.0	29.8 to 28.8	Clay-sand, marble cake like mix dark grey clay and fine light grey sand, clay 70% CL
Jar 14	24 to 25.0	28.8 to 27.8	Clay-sand, marble cake like mix dark grey clay and fine light grey sand, clay 70% CL
Jar 15	27.0 to 28.0	25.8 to 24.8	Clay, dark grey clay with layers to 1/4" of fine quartz sand, clay 80% CL
Jar 16	29.0 to 30.0	23.8 to 22.8	Clay-sand, marble cake like mix dark, grey clay and fine, light grey quartz sand clay 80% CL
Jar 17	30.0 to 30.5	22.8 to 22.3	Clay-sand, marble cake like mix dark, grey clay and fine, light grey sand, clay 80% CL
Jar 18	35.0 to 36.0	17.8 to 16.8	Clay-sand mixture dark grey clay and fine, light grey quartz sand, clay 60% CL & SP
Jar 19	39.0 to 41.0	13.8 to 11.8	Clay-sand, dark grey, clay with layers to 1/4" of fine quartz sand, clay 80% CL
Jar 20	41.0 to 43.5	11.8 to 9.3	Sand-clay, mixture light grey fine quartz sand and dark grey clay sand 60% SP&CL
Jar 22	50.0 to 51.0	2.8 to 1.8	Sand, grey fine-medium quartz, w/some pockets clay to 1", some silt SM

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 52.8

HOLE NO.52

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 23	64.0 to 66.1	-11.2 to -13.3	Sand, light grey fine quartz, occasional paper thin layer of clay SP
Jar 24	69.0 to 69.3	-16.2 to -16.5	Sand, light grey fine quartz, sand, occasional paper thin layer of clay CL
Jar 25	72.0 to 72.2	-19.2 to -19.4	Sand, light grey fine quartz sand, occasional paper thin layer of clay SP
Jar 26	74.7 to 74.9	-21.9 to -22.1	Sand, light grey fine quartz sand, occasional layer clay 1/8" SP
Jar 27	77.6 to 77.7	-24.8 to -25.1	Sand, brown-grey, fine to medium quartz, some clay, trace fine decomposed shell SC

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 53

GROUND ELEVATION 51.8

LOCATION: Station 597+00, 75' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	0.5 to 1.5	51.3 to 50.3	Sand, tan fine quartz, trace silty clay SP-SC
Jar 2	5.0 to 6.0	46.8 to 45.8	Sand, grey fine-coarse, clayey, trace fine-coarse shell SC
Jar 3	10.0 to 11.0	41.8 to 40.8	Sand, tan-orange brown, fine quartz, some clay, some clay layers to 1/8", partly cemented SC
Jar 4	15.0 to 16.0	36.8 to 35.8	Clay, dark grey w/pockets grey, fine SP sand, clays 90% CL
Jar 5	20.0 to 21.0	31.8 to 30.8	Clay, dark grey w/pockets grey, fine, SP sand, clay 90% CL
Jar 6	25.0 to 26.0	26.8 to 25.8	Sand, light grey fine quartz w/clay layers to 1/8", sand 60%, clay 40% SP & CL
Jar 7	30.0 to 31.0	21.8 to 20.8	Sand, light grey, fine quartz w/dark grey clay layers to 1/2", sand 60%, clay 40% SP & CL
Jar 8	35.0 to 36.0	16.8 to 15.8	Clay, dark grey, clay w/light grey fine quartz sand layers to 1/8", clay 70% sand 30% CL & SP
Jar 9	40.0 to 41.0	11.8 to 10.8	Sand, light grey, fine-medium, quartz, w/some dark, grey clay layers to 1/8", sand 70% SP
Jar 10	45.0 to 46.0	6.8 to 5.8	Sand, light grey, fine quartz, trace silt, few layers clay to 1/8", SP-SM
Jar 11	50.0 to 51.0	1.3 to 0.3	Sand-clay, marble cake mix light- grey fine quartz & grey sandy clay, sandy clay 60% CL & SP
Jar 12	55.0 to 56.0	-3.7 to -4.7	Sand, grey, medium-fine quartz some silt SM

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 51.3

HOLE NO.53

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 13	60.0 to 61.0	-8.7 to 9.7	Sand grey, medium - fine quartz some silt, few layers clay to 1/16" SM
Jar 14	65.0 to 66.0	-13.7 to -14.7	Sand, light grey, fine quartz few clay layers to 1/16" SP
Jar 15	70.0 to 71.0	-18.7 to -19.7	Clay, dark grey w/layers sand to 1/8" CL
Jar 16	75.0 to 76.0	-23.7 to -24.7	Sand, light grey, medium, fine quartz SP

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 58

GROUND ELEVATION 48.0

LOCATION: Station 599+35, 75' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0.5 to 1.0	48.0 to 47.5	Sand, brown, fine quartz trace silty clay SP- SC
2	2.5 to 3.6	45.5 to 44.4	Sand, brown, fine quartz partly cemented SP
3	6.0 to 7.0	42.0 to 41.0	Sand, tan, medium-coarse quartz trace coarse-fine shell SP
4	9.0 to 10.5	39.0 to 37.5	Clay-sand, layers and pockets to 2" dark grey clay & light grey fine quartz sand, few pieces gravel, partial cementing in some of sand CL & SP
5	12.5 to 13.5	35.5 to 34.5	Clay-sand, layers & pockets to 1" dark grey clay & light grey fine quartz sand CL & SP
6	15.5 to 16.5	32.5 to 31.5	Sand-clay, layers & pockets to 2" light grey fine quartz & dark grey clay sand layers 60% SP & CL
7	18.5 to 19.5	29.5 to 28.5	Sand-clay, layers & pockets dark grey clay & fine light grey quartz sand to 1-1/2" SP & CL
8	21.0 to 22.5	27.0 to 26.0	Clay-sand, layers & pockets to 1.5" of dark grey clay & fine light grey quartz sand CL & SP
9	24.5 to 25.5	23.5 to 22.5	Clay, dark grey layers to 1" w/few paper thin layers light grey fine quartz sand CL
10	27.5 to 28.5	20.5 to 19.5	Clay-sand, marble cake mixture of dark grey clay & fine light grey quartz sand clay 60%, sand 40% CL & SP

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 48.0

HOLE NO.58

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
11	30.5 to 31.5	17.5 to 16.5	Clay-sand, dark grey clay layers to 1/2" w/paper thin layers light grey fine quartz, CL
12	33.5 to 34.5	14.5 to 13.5	Sand-clay, light grey fine quartz w/dark gray clay layers to 1" SP & CL
13	36.5 to 37.5	11.5 to 10.5	Sand, light grey fine quartz w/occasional paper thin layers clay, sand layers 70% SP
14	39.5 to 40.5	8.5 to 7.5	Sand, light grey fine quartz, occasional paper thin layers clay SP
15	41.5 to 42.5	6.5 to 5.5	Sand, light grey fine quartz, numerous paper thin layers clay SP
17	48.5 to 49.5	0.5 to -1.5	Sand-clay grey fine-medium quartz w/layers dark grey clay to 1/2"
18	52.5 to 53.5	-4.5 to -5.5	Sand-clay layers to 1" of light grey fine quartz & dark grey clay CL & SP
19	54.5 to 55.5	-6.5 to -7.5	Sand, tan-light grey fine quartz w/ some layers and pockets dark grey clay to 1/4", sand 70% SP
20	57.5 to 58.5	-9.5 to -10.5	Sand, light grey fine quartz w/some layers and pockets dark grey clay to 1/4", sand 70% SP
21	60.5 to 61.5	-12.5 to -13.5	Sand light grey fine quartz w/some layers and pockets dark grey clay to 1/4", sand 70%
22	63.5 to 64.5	-15.5 to -16.5	Sand, light grey fine quartz, occasional layers clay to 1/8". SP

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 48.0

HOLE NO.58

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
23	66.0 to 67.5	-18.0 to -19.0	Sand, brown fine-medium quartz, some silty clay & soft decom- posed shell, partly cemented SC

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 60

GROUND ELEVATION 73.8

LOCATION: 595+00, 550' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1.	0 to 2.0	73.8 to 71.8	Sand, brown, fine-medium quartz trace - some silt, SP-SM
2	2.0 to 5.0	71.8 to 68.8	Sand, red brown medium-fine quartz, clayey, firm, SC
3	5.0 to 8.0	68.8 to 65.8	Sand, red brown w/yellow brown paper thin layers, fine- medium quartz, clayey, firm SC
4	8.0 to 11.0	65.8 to 62.8	Silt, red brown, fine sandy clayey ML
5	11.0 to 14.0	62.8 to 59.8	Silt, red brown w/paper thin layers grey clay, firm ML & CL
6	14.0 to 17.0	59.8 to 56.8	Clay, red brown w/light grey paper thin layers, some thin layers yellow brown silt, firm-stiff CH & CL
7	17.0 to 20.0	56.8 to 53.8	Clay, red brown & light grey w/paper thin layers silty firm-stiff CH & CL
8	20.0 to 23.0	53.8 to 50.8	Sand, brown coarse-fine quartz, trace-some clay SP-SC
9	23.0 to 26.0	50.8 to 47.8	Sand, brown, coarse-fine quartz, trace-some silt SP-SM
10	26.0 to 29.0	47.8 to 44.8	Sand, yellow brown, coarse-fine quartz, trace-some silt SP-SM
11	29.0 to 32.0	44.8 to 41.8	Sand, yellow brown fine quartz trace- some silt SP-SM
12	32.0 to 35.0	41.8 to 38.8	Sand, yellow brown fine quartz some silt, some discontinuous paper thin layers grey clay SM

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AD-A149 576

COOPER RIVER REDIVERSION PROJECT LAKE MOULTRIE AND
SANTEE RIVER SOUTH CAR. (U) ARMY ENGINEER DISTRICT
SAVANNAH GA FEB 76

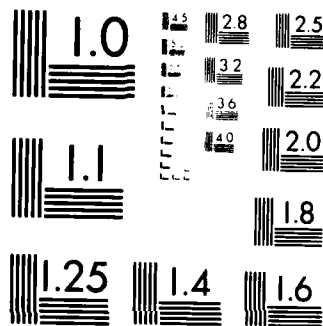
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 61

GROUND ELEVATION 55.3

LOCATION: Station 595+00, 500' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0.0 to 0.2	55.3 to 55.1	Sand, grey, fine to medium quartz, some silt, trace organic material SM
2	2.8 to 3.1	52.5 to 52.3	Sand, red brown, coarse-fine quartz, clayey, firm SC
3	5.0 to 5.2	50.3 to 50.1	Sand, red brown-grey, coarse- fine, quartz, clayey, stiff SC
4	5.3 to 8.2	47.3 to 47.1	Sand, red brown, coarse-fine, clayey, firm SC
5	8.2 to 10.0	47.1 to 45.3	Sand, red brown, coarse-fine quartz, clayey SC
6	14.5 to 14.7	40.8 to 40.6	Sand, tan & grey, fine quartz some pockets clay, trace - some silt SM
7	16.5 to 16.7	38.8 to 38.6	Sand, tan, fine quartz, trace - some silt, some pockets of clay to 1/4" SM & CL

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 62

GROUND ELEVATION 68.6

LOCATION: Station 595+00, 300' Left Centerline

<u>Sample No.</u>	<u>Depth</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	1.0 to 4.0	67.6 to 64.6	Clay, orange brown, silty fine sandy CL
Jar 2	5.0 to 9.0	63.6 to 59.6	Clay-silt, red brown & grey layers to 1/16" clay & fine sandy silt CL & ML
Jar 3	9.0 to 14.0	59.6 to 54.6	Clay, red w/white layers to 1/16", some silt CL
Jar 4	15.0 to 20.0	53.6 to 48.6	Sand, red brown, medium to coarse quartz, clayey SC
Jar 5	20.0 to 25.5	48.6 to 43.1	Sand, brown, medium to coarse quartz, some clay SC
Jar 6	25.5 to 31.5	43.1 to 37.1	Sand, tan, fine quartz w/trace some silt SM

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 63

GROUND ELEVATION 50.2

LOCATION: Station 594+80, 250' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	1.0 to 1.2	49.2 to 49.0	Sand, tan, fine, quartz, some silt, SM
Jar 2	2.5 to 2.7	47.7 to 47.5	Sand, buff, fine, quartz, trace silt, few small pockets clay SP-SM
Jar 3	5.0 to 5.2	45.2 to 45.0	Sand, tan, fine quartz, some silt, occasional pocket clay to 1/4" SP-SM
Jar 4	10.0 to 11.5	40.2 to 38.7	Sand, red brown, fine quartz, with brown & white clay layers to 1/16" SP & CL
Jar 5	15.0 to 16.5	35.2 to 33.7	Clay, layers dark grey clay & light grey fine quartz to 1", clay 60% CL & SP
Jar 6	20.0 to 21.5	30.2 to 28.7	Clay-sand, layers dark grey clay & light grey fine quartz to 1" CL & SP
Jar 7	25.0 to 26.5	25.2 to 23.7	Clay-sand, layers dark grey clay & light grey fine quartz to 1" CL & SP
Jar 8	30.0 to 31.5	20.2 to 18.7	Clay-sand, layers dark grey clay fine quartz to 1" CL & SP
Jar 9	35.0 to 36.5	15.2 to 13.7	Sand grey, medium-fine quartz, some clayey silt SM
Jar 10	40.0 to 41.5	10.2 to 8.7	Sand, mix of light grey & dark grey quartz with some silt SM & SP

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 50.2

HOLE NO.63

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 11	45.0 to 46.0	5.2 to 4.2	Sand, light grey, fine quartz, some pockets clay to 1/2" SP
Jar 12	50.0 to 50.4	0.2 to -0.2	Sand, light grey, fine quartz, some pockets clay to 1/2" SP
Jar 13	55.0 to 55.2	-4.8 to -5.0	Sand, light grey, fine quartz, occasional clay layer to 1/8"
Jar 14	60.0 to 60.2	-9.8 to -10.0	Sand, grey, fine quartz trace silt SP-SM
Jar 15	65.0 to 65.2	-14.8 to -15.0	Sand, grey, fine, quartz, occasional paper thin layer of clay SP
Jar 16	75.0 to 75.2	-24.8 to -25.0	Sand grey fine quartz, occasion- al paper thin layer of clay SP
Jar 17	81.0 to 82.0	-30.8 to -31.0	Sand, grey medium to fine quartz, trace silt, some pockets clayey sand SP-SM & SC

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 64

GROUND ELEVATION 54.1

LOCATION: Station 597+10, Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0 to 1.0	54.1 to 53.1	Sand, grey, fine quartz, trace silt SP-SM
2	4.8 to 5.0	49.3 to 49.0	Sand, brown-grey, fine-medium quartz, trace-some silt SM
3	6.5 to 6.8	47.6 to 47.3	Sand, light grey, coarse-fine quartz, clayey, firm SC
4	9.7 to 10.0	44.4 to 44.1	Sand, tan & red brown, coarse-fine quartz, clayey, trace fine gravel SC
5	12.7 to 13.1	41.4 to 41.1	Sand-clay, brown, fine quartz, some silt w/discontinuous, paper thin layers clay SM & CL
6	17.5 to 17.7	36.6 to 36.4	Clay, dark grey clay with paper thin layers silt & fine silty sand CL
7	20.0 to 21.0	34.1 to 33.1	Sand-clay layers to 1" of light grey fine quartz w/a trace of silt and dark grey clay CL & SP, SP-SM

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 65

GROUND ELEVATION 70.6

LOCATION: Station, 597+00, 400' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	0.0 to 0.2	70.6 to 70.4	Sand, brown, fine quartz silty SM
Jar 2	0.9 to 1.0	69.7 to 69.6	Sand, yellow brown, fine quartz, clayey SC
Jar 3	1.5 to 4.0	69.1 to 66.6	Clay, red & yellow brown, stiff CL & CH
Jar 4	4.0 to 5.5	66.6 to 65.1	Clay, red & yellow brown, fine, sandy, stiff CL & CH
Jar 5	5.8 to 6.0	64.8 to 64.6	Clay, red-yellow brown & light grey, silty firm CL
Jar 6	10.0 to 10.2	60.6 to 60.4	Clay, red-yellow brown & light grey, firm CL
Jar 7	10.2 to 13.0	60.4 to 57.6	Clay, red-yellow brown & light grey, firm CL
Jar 8	15.0 to 16.2	55.6 to 54.4	Clay, red brown & grey, silty firm CL
Jar 9	17.6 to 17.9	53.0 to 52.8	Sand, yellow brown, coarse- fine quartz, trace-some clay SC
Jar 10	18.0 to 19.5	52.6 to 51.1	Sand, yellow brown, coarse-fine quartz, some pockets red clay SC
Jar 11	19.5 to 21.6	51.1 to 49.6	Sand, brown, coarse-fine quartz trace-some silt SM
Jar 12	21.0 to 22.5	49.6 to 48.1	Sand, brown coarse-fine quartz, silty, partly cemented SM
Jar 13	22.5 to 24.0	48.1 to 46.6	Sand, brown coarse-fine quartz, silty some cementing SM

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 70.6

HOLE NO.65

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 14	24.5 to 25.5	46.1 to 45.1	Sand, brown coarse-fine quartz, trace silt & fine gravel, some cementing SM
Jar 15	25.5 to 27.0	45.1 to 43.6	Clay grey w/paper thin layers yellow-brown sand CL
Jar 16	27.0 to 28.9	43.6 to 42.7	Clay dark grey w/layers & pockets clean sand to 1/8" CL

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 65

GROUND ELEVATION 70.6

LOCATION: Station 597+00, 400' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 1	28.0 to 31.0	42.6 to 39.6	Sand-clay alternating 1/8"-1/4" layers fine light grey quartz sand & dark grey clay, upper 1.0' disturbed & partly cemented estimate 50% each type. SP & CL
Pull 2	31.0 to 34.0	39.6 to 36.6	31.0'-32.5' Clay, dark grey 1/8"-2" layers w/scattered 1/16" layers fine quartz sand CL 32.5'-34.0 light grey fine-veryfine quartz w/layers to 1/8" clay at 6" spacing SP
Pull 3	34.0 to 37.0	36.6 to 33.6	34.0'-34.3' Sand, coarse-fine clayey, tan & orange speckling, (probably cave) SC 34.3'-37.0' marble cake mix of light grey fine quartz & dark grey clay, partly cemented, some decomposed shell SP & CL
Pull 4	37.0 to 40.0	33.6 to 30.6	37.0'-37.3' Clay, dark grey w/few 1/16" layers SP sand CL 37.3'-38.7 Sand, light grey, firm quartz, partly cemented SP 38.7'-40.0 No recovery
Pull 5	40.0 to 42.6	30.6 to 28.0	40.0' - 40.5 Sand, light grey, fine quartz with 1/8" layers clay at 2"-3" spacing SP 40.5'-41.7' Clay, dark grey 1/4-1/2" layers sand to 30% CL 70% 41.7'-42.6' Sand, fine light grey quartz few 1/16" layers clay SP 90%
Pull 6	42.6 to 47.0	28.0 to 23.6	42.6'-44.0' Clay-Sand, discontinuous 1/8" -2" layers light grey fine quartz & dark grey clay, layers contain pockets to 1/2" of clay sand clay 60%, sand 40% CL & SP

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 70.6

HOLE NO.65

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 7	47.0 to 50.0	23.6 to 20.6	47.0' - 48.2' Sand-Clay, 1/8" - 2" layers light gray fine quartz & dark grey clay, sand 60%, clay 40%, SP & CL 48.2' - 50.0' Clay-sand, 1/6" - 1" layers dark grey clay and fine light grey, quartz clay 75% sand 25% CL
Pull 8	50.0 to 53.0	20.6 to 19.8	50.0' - 50.8' Sand, grey, medium to fine, quartz, some silt SM 50.8' - 51.1" Clay dark grey layers to 1" w/layers to 1" of light grey fine sand clay 75% CL 51.1' - 51.7' Sand grey, medium- fine quartz, some silt, scattered clay layers - 1/8" SM 51.7' - 52.4' Clay-sand, layers dark grey clay & fine light gray clay to 2" CL & SP
Pull 9	53.0 to 57.0	17.6 to +13.6	53.0 - 54.2 Sand dark grey medium- fine quartz, some pockets clay to 1", few cemented SP 54.2 - 57.2 Sand, light grey fine quartz w/layers to 1" of dark gray clay & 3'-4' spacing, sand 85% clay 15% SP
Pull 10	57.0 to 61.0	13.6 to 9.6	57.0'-57.4' Clay dark grey w/few 1/16" layers sand, clay 90% CL 57.4'-58.2' Sand, fine light-gray quartz SP 58.2' - 58-7' Clay-sand layers to 1/4" dark grey clay & fine light grey quartz SP & CL 58.7' - 59.3' Sand, light grey fine quartz, 1" layer clay SP 59.3' - 61.0' No recovery
Pull 11	61.0 to 64.0	9.6 to 6.6	61.0'-62.0' Clay dark grey w/1/16" layers sand CL 62.0'-64.0' Sand light grey fine quartz w/two 1" layers clay SP

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 70.6

HOLE NO.65

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 12	64.0 to 67.0	6.6 to 3.6	Sand fine light grey quartz, two 2" layers of clay, clay layers have paper thin laminae sand SP
Pull 13	67.0 to 70.0	3.6 to 0.6	67.0'-68.0' Sand dark grey medium-fine quartz, some silt, (mixed by drilling) SM 68.0' - 70' Sand grey medium-fine quartz, some coarse shell, 1" layer with lignite 69.0' SP
Pull 14	70.0 to 73.0	0.6 to -2.4	Sand, grey medium-fine quartz some coarse shell, 0.6' layer cemented at 72' SP
Pull 15 Loss 2.0'	73.0 to 77.0	-2.4 to -6.4	Sand grey, fine-medium quartz, trace coarse-fine shell & silt, SP-SM
Pull 16 Loss 1.0'	77.0 to 80.0	-6.4 to -9.4	Sand, light grey fine quartz grades to medium-fine at 78.5', 1/8" layers clay at 1" spacing 78.5' - 80.0 SP
Pull 17 Loss 1.7'	80.0 to 83.0	-9.4 to -12.4	Sand, light grey fine quartz SP
Pull 18	83.0 to 86.0	-12.4 to -15.4	Sand light grey, fine-medium quartz, 1/2" layer silt at 85' SP
Pull 19	86.0 to 89.0	-15.4 to -18.4	Sand light grey fine-medium quartz w/ occasional 1/16" layer clay SP
Pull 20 Loss 2.5'	89.0 to 94.0	-18.4 to -23.6	Sand, 89.0'-89.7 tan-grey coarse quartz 89.7'-91.5 light grey medium-fine 91.5-94.0, no recovery SP
Pull 21	94.0 to 98.0	-23.6 to -27.6	Sandstone-shale 94.2'-94.8' Sandstone, silty 94.8'-95.8' Shale, sandy 95.8'-98.1' Shale, sandy

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 66

GROUND ELEVATION 53.4

LOCATION: Station 597+10, 400' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	1.0 to 1.2	52.4 to 52.2	Sand, brown, fine-medium, quartz, trace-some silt, SM
Jar 2	3.0 to 3.2	49.4 to 49.2	Sand, red brown & orange fine- coarse quartz, some clay SC
Jar 3	5.0 to 5.2	48.4 to 48.2	Sand, red brown coarse quartz, some y, LW pieces gra SC
Jar 4	7.0 to 7.2	46.4 to 46.2	Sand, Buff, medium fine quartz
Jar 5	10.0 to 10.2	43.4 to 43.2	Sand-clay, orange brown, fine silty sand w/ clay layers to 1" SC & CL
Jar 6	15.0 to 16.5	38.4 to 36.9	Sand, brown, fine quartz w/trace -some silt & small pockets of light grey clay SM
Jar 7	20.0 to 21.5	33.4 to 31.9	Clay dark grey layers to 2" w/layers light grey sand to 1", clay 70% CL
Jar 8	25.0 to 25.4	28.4 to 28.0	Clay, layers dark gray clay and light grey fine quartz sand, clay 55% CL & SP
Jar 9	30.0 to 31.5	23.4 t	Clay, layers dark grey clay and light grey fine quartz sand to 1", clay 60%CL & SP
Jar 10	35.0 to 36.5	18.4 to 17.9	Clay-sand, layers dark gray clay & fine light gray sand, clay 70% CL
Jar 11	40.0 to 41.5	13.4 to 12.0	Sand, fine light gray quartz w/occasional paper thin clay layers SP

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 53.4

HOLE NO.66

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 12	45.0 to 46.5	8.4 to 6.9	Sand, grey medium-fine quartz, some coarse fine shell, trace - some silt, SP-SM
Jar 13	50.0 to 51.5	3.4 to 1.9	Sand-clay, layers fine quartz sand w/some shell and dark grey clay to 1" SP & CL
Jar 14	55.0 to 56.5	-1.6 to -2.0	Sand-clay, layers dark grey clay & light grey fine quartz to 1", clay 60% CL & SP
Jar 15	60.0 to 60.2	-6.6 to -6.8	Sand, light gray fine quartz w/occasional paper thin layers clay, sand 90% SP
Jar 16	65.4 to 65.8	-12.0 to -12.4	and, light gray fine quartz w/occasional paper thin layers clay, sand 90% SP
Jar 17	70.0 to 70.2	-16.6 to -16.8	Sand, light gray fine quartz, few discontinuous paper thin layers clay SP
Jar 18	80.0 to 80.2	-26.6 to -26.8	Sand, light grey fine quartz, few discontinuous paper thin layers of clay SP
Jar 19	82.0 to 82.2	-28.6 to -28.6	Sand, brown-gray, fine medium quartz, some coarse-fine decomposed shell, some silt, few cemented pockets SM

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 67

GROUND ELEVATION 63.4

LOCATION: Station 598+60, 320' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	0.7 to 0.9	62.7 to 62.5	Sand, brown, fine, quartz, some silt SM
Jar 2	2.3 to 2.5	61.1 to 60.9	Clay, red brown, fine, sandy firm CL
Jar 3	4.3 to 4.5	59.1 to 58.9	Clay, red brown & grey, firm CL
Jar 4	5.8 to 6.4	57.6 to 57.4	Clay, red brown & grey, firm CL
Jar 5	8.2 to 8.4	55.2 to 55.0	Sand, red brown, fine-coarse quartz, some clay SC
Jar 6	10.6 to 10.8	52.8 to 52.6	Sand, red brown, fine-coarse quartz, some clay SC
Jar 7	14.0 to 14.2	49.4 to 49.2	Sand, brown, coarse-fine quartz, trace-some silt, SP-SM
Jar 8	16.0 to 16.2	47.4 to 47.2	Sand, brown, coarse-fine quartz, trace-some silt SP-SM
Jar 9	17.3 to 17.5	46.1 to 45.9	Sand, brown, coarse-fine quartz some gravel trace silt SP-SM
Jar 10	19.3 to 19.5	44.1 to 43.9	Sand, red brown, fine silty clayey SC
Jar 11	21.3 to 21.5	42.1 to 41.9	Clay, grey with paper thin, layers of red brown, sand CL

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 68

GROUND ELEVATION 55.4

LOCATION: Station 598+60, 380' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	1.3 to 1.5	53.1 to 52.9	Sand, brown, coarse to fine quartz, some clay SC
Jar 2	1.5 to 4.5	52.9 to 50.9	Sand grey, coarse to fine quartz, clayey SC
Jar 3	4.5 to 5.5	50.9 to 49.9	Sand, grey coarse to fine quartz, clayey SC
Jar 4	5.5 to 6.7	49.9 to 48.7	Sand, grey, coarse to fine quartz, trace gravel & clay SP-SC
Jar 5	8.5 to 8.7	46.9 to 46.7	Sand, tan fine-medium quartz, trace of silt SP-SM
Jar 6	11.1 to 11.3	44.3 to 44.1	Sand tan, fine-medium quartz, trace clayey silt SP-SM
Jar 7	13.1 to 13.3	42.3 to 42.1	Sand, red brown, fine-medium quartz some silt SM
Jar 8	15.1 to 15.3	40.3 to 40.1	Clay, dark grey with layers of fine silty sand to 1" CL
Jar 9	17.1 to 17.3	38.3 to 38.1	Clay, dark grey with layers of fine silty sand to 1" CL
Jar 10	19.5 to 19.7	35.9 to 35.7	Clay, dark grey with layers of fine silty sand CL
Jar 11	21.0 to 21.2	34.4 to 34.2	Clay, dark grey with layers of fine sand CL

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 69

GROUND ELEVATION 61.1

LOCATION: Station 600+20, 400' Left

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0 to 3.0	61.1 to 58.1	Sand, brown fine-medium quartz, silty SM
2	3.0 to 6.0	58.1 to 55.1	Clay, red brown, firm-stiff CL
3	6.0 to 9.0	55.1 to 52.1	Sand, red brown, coarse-fine clayey, firm SC
4	9.0 to 12.0	52.1 to 49.1	Sand, red brown, coarse-fine clayey, silty, firm SC
5	12.0 to 15.0	49.1 to 46.1	Sand, brown, coarse - fine trace - some clay, SP-SC
6	15.0 to 18.1	46.1 to 43.1	Sand, brown, fine-medium, numerous discontinuous paper thin layers clay, some silt SM-SC
7	18.1 to 21.0	43.1 to 40.1	Sand, yellow brown fine, few discontinuous paper thin layers clay, some silt SM
8	21.0 to 24.0	40.1 to 37.1	Clay-sand, layers to 1/4" of dark grey clay & light grey, fine, quartz sand w/ a trace to some silt CL & SP-SM

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 70

GROUND ELEVATION 56.2

LOCATION: Station 600+20, 400' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 3	26.5 to 30.5	29.7 to 25.7	Sand light grey, fine, quartz, SP alternating 1/4" layers, clay & sand at 27.2' - 27.5'.
Pull 4	30.5 to 35.5	25.7 to 31.0	Clay-sand, alternating layers dark grey clay & light grey fine sand CL&SP 30.5' - 31.0', CL w/1/6" layers SP; CL 90% 31.0' - 31.3' SP slightly cemented 31.3' - 31.5', CL w/1/16", layers SP; CL 80% 31.5' - 31.7'. SP-CL 1/8" laminae, 50% each 31.7' - 31.9', CL w/1/16" layers SP; CL 80% 31.9' - 32.1', SP cemented 32.1' - 32.5' CL w/1/4" layers SP; CL 60% 32.5' - 32.9' SP cemented 32.9' - 33.1', CL w/1/16" layers SP; CL 90% 33.1' - 35.5 No recovery
Pull 5	35.5 to 40.5	20.7 to 15.7	Clay-Sand, alternating layers dark grey clay & fine light grey sand CL&SP 35.5' - 36.0', SP cemented 36.0' - 38.0', CL w/1/2" layers SP, CL 70% 38.0' - 38.7' CL w/1/2" layers SP; CL 60% 38.7' - 39.4' SP medium-fine quartz some shell 39.4' - 39.7' CL w/1/4" layers SP; CL 90% 39.7' - 40.5' No recovery

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 56.2

HOLE NO.70

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 6	40.5 to 45.5	15.7 to 10.7	40.5' - 40.7' Clay dark grey 40.7' - 45.5' No recovery
Pull 7	45.5 to 50.5	10.7 to 5.7	45.5' - 46.2', Clay w/ distorted 1/2" layers SP CL 70% 46.2' - 46.7' SP-CL 1/4" layers: 50% 46.7' - 47.0 SP-CL 1/4" layers:50% 47.0' - 47.4' SP w/layers to 1/2" CL, SP 60% 47.4' - 50.5' No recovery Sand Light grey fine quartz scattered paper thin to 1/4" layers clay SP 90%
Pull 8	50.5 to 55.5	5.7 to 0.7	
Pull 9	55.5 to 60.5	0.7 to -4.3	55.5' to 56.5' Marble cake mix f-m SP & CL SP 70% 56.5' to 57.2' SP fine, w/scat- tered layers to 1/8" CL SP 95% 57.2' to 57.4' CL w/1/16" layers SP; CL 60% 57.4' to 57.6' ML Calcareous 57.6' to 58.1', distorted layers to 1/2", CL & SP 50% each 58.1' to 60.5' No recovery
Pull 10	60.5 to 65.5	-4.3 to -9.3	60.5' to 61.0 distorted layers to 1/2" CL & SP 50% each 61.0' to 65.5' No recovery
Pull 11	65.5 to 70.5	-9.3 to -14.3	65.5' to 61.0' distorted mix fine-medium SP & CL 61.0' to 67.5' light grey, fine to medium quartz: SP 67.5' to 70.5' No recovery
Pull 12	70.5 to 75.5	-14.3 to -19.3	70.5' to 75.5 No recovery
Pull 13	75.5 to 80.5	-19.3 to -24.3	75.5' to 76.0' brown, coarse fine sand w/trace silt, cave? 76.0' to 78.0' light grey fine quartz, occasional distorted 1/4" layer clay, SP 78.0' to 80.5' No recovery

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COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 56.2

HOLE NO.70

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 14	80.5 to 85.5	-24.3 to -29.3	80.5' to 82.5' fine-medium quartz trace silt & soft shell, compare to loosely cemented SP & SM 82.5' to 85.5' Sandstone-Shale

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REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 71

GROUND ELEVATION 56.2

LOCATION: Station 602+00, 450' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 1	36.0 to 39.0	20.2 to 17.2	36.0' - 36.5' Clay-sand, layers to 1/2" of dark grey clay & light grey fine quartz sand CL & SP 36.5' - 36.8' Clay-dark grey w/two 1/4" layers sand CL 36.8' - 37.1' Sand-fine loosely cemented SP 37.1' - 38.2' Clay dark grey layers to 1" w/1/2" layers sand CL 38.2' - 38.4' Sand, light grey, fine SP 38.4' - 38.8' Clay, dark grey CL 38.8' - 39.0' No recovery
Pull 2	39.0 to 42.0	17.2 to 14.2	39.0' - 39.4' Sand light grey, fine quartz, two 1/2" layers clay SP 39.4' - 42.0' Clay dark grey 2"-3" layers with 1"-2" layers fine light, grey quartz sand clay 60%, sand 40% CL & SP
Pull 3	42.0 to 45.0	14.2 to 11.2	Sand, light grey fine quartz with occasional layer to 1/2" of dark grey clay, sand layers - 75% SP
Pull 4	45.0 - 46.5	11.2 to 9.7	45.0' - 45.8' Clay, dark grey w/1/16" layers fine sand CL 45.8' - 46.2' Sand, light grey, fine quartz SP 46.2' - 46.5' Clay dark grey w/1/2" layers fine quartz sand, clay 80% CL
Pull 5	46.5 to 50.0	9.7 to 6.2	46.5' - 46.7' Clay, dark grey CL 46.7' - 47.4' Sand, light grey SP 47.4' - 50.0' Clay - Sand, layers to 3" of dark grey clay & light grey fine sand, CL&SP

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SUPPLEMENTARY LOG

GROUND ELEVATION 56.2

HOLE NO.71

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
Pull 6	50.0 to 54.0	6.2 to 2.2	Sand, light grey, fine-medium quartz, some coarse-fine shell, occasional 1/4" - 1/2" layer clay, SP
Pull 7	54.0 to 59.0	2.2 to -2.8	Sand, light grey fine to medium quartz SP
Pull 8	59.0 to 63.0	-2.8 to -6.8	Sand, light grey fine to medium quartz 61.0' -63.0' no recovery
Pull 9	63.0 to 66.0	-6.8 to -9.8	Sand, grey, fine-medium quartz, trace silt SP-SM
Pull 10	66.0 - 68.5	-9.8 to -12.3	Sand, light grey fine quartz, occasional paper thin layer of clay SP
Pull 11	68.5 to 71.5	-12.3 to -15.3	Sand, light grey, fine, occasional thin, discontinuous layers of clay SP
Pull 12	71.5 to 75.0	-15.3 to -18.8	Sand, light grey, fine quartz, 1/4" layer sandy clay at 70.0 SP
Pull 13	75.0 to 78.0	-18.8 to -21.8	Sand, light grey fine quartz, scattered 1/4" - 1/2" SP
Pull 14	78.0 to 81.0	-21.8 to -24.8	78.0' - 79.0 Sand, fine, grey SP 79.0' - 81.0 Sand, grey, medium -fine quartz, trace-some silt SP - SM
Pull 15	81.0 to 84.0	24.8 to 27.8	81.0' - 82.1' Sand, brownish grey fine medium quartz, trace decomposed shell, partly cemented SM 82.1' - 83.0 Sandstone hard silty 83.0' - 84.0' Shale-sandstone, compact cemented, hard

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 72

GROUND ELEVATION 60.1

LOCATION: Station 602+00, 500' Left Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0.0 to 0.2	60.1 to 59.9	Sand, brown medium-fine quartz, some silt SM
2	0.2 to 1.2	59.9 to 58.9	Sand, brown, coarse-fine quartz silty clayey SC
3	5.0 to 5.2	55.1 to 54.9	Sand, red brown, coarse-fine quartz, clayey stiff SC
4	8.0 to 8.2	52.1 to 51.9	Sand, red brown tan & grey coarse-fine quartz, clayey stiff SC
5	10.0 to 10.2	50.1 to 49.9	Sand, buff, coarse-fine quartz trace clayey silt, occasional gravel SP - SM
6	15.0 to 17.1	45.1 to 43.0	Sand, grey fine quartz trace silt, discontinuous paper thin layers of clay SP - SM
7	20.0 to 21.5	40.1 to 38.6	Sand, tan, medium-fine quartz, trace silt SP - SM
8	25.0 to 26.5	35.1 to 33.6	Sand, tan, medium-fine quartz some pockets & discontinuous paper thin layers clay trace some silt SM
9	30.0 to 31.5	30.1 to 28.6	Clay, layers dark grey clay and fine light grey quartz sand - 1/4" CL & SP - SM

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 74

GROUND ELEVATION 57.8

LOCATION:

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
Jar 1	0.9 to 1.0	57.8 to 56.8	Clay, red, fine, sandy CL
Jar 2	4.8 to 5.0	53.0 to 52.8	Sand, red coarse - fine quartz some clay SC
Jar 3	9.8 to 10.0	48.0 to 47.8	Sand, brown, coarse-fine quartz, some silt SM
Jar 4	19.8 to 20.0	38.0 to 37.8	Sand, tan, fine quartz trace to some silt SP - SM
Jar 5	20.8 to 21.0	37.0 to 36.8	Sand, tan and grey, fine quartz, some clay SC
Jar 6	24.0 to 24.2	33.8 to 33.6	Clay-silt, thin layers of dark grey clay and silt CL & ML

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-1-A

GROUND ELEVATION 57.5

LOCATION: Station 590+13, 665' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	1.5 to 10.5	56.0 to 47.0	Sand, brown-red brown coarse-fine quartz, some silty clay, some of sample is stiff SC
2	10.5 to 13.5	47.0 to 43.0	Sand yellow brown coarse-fine quartz, some subrounded gravel to 1", trace-some silt, some pockets to 1" of clayey sand SM & SC
3	13.5 to 16.5	43.0 to 41.5	Sand, tan-light grey, fine-very fine quartz, trace-some silt, few pockets & paper thin layers of clay SM
4	16.5 to 24.0	41.0 to 33.5	Sand, light grey, fine to very fine, quartz w/discontinuous, paper thin, layers of dark grey clay, trace silt SP-SM
5	24.0 to 25.0	33.5 to 32.5	Sand, grey, medium-fine quartz, some silt, trace-coarse-fine shell, few pieces gravel size shell, partly cemented SM

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-2A

GROUND ELEVATION 63.7

LOCATION: Station 580+85, 1,050 Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0.0 to 3.0	63.7 to 60.7	Sand, brown, fine quartz some silt & root material SM
2	3.0 to 10.0	60.7 to 50.7	Clay, yellow-red brown, w/streaks of grey, fine sand Stiff CL
3	10.0 to 15.0	50.7 to 48.7	Silt, yellow-red brown & light grey, fine sandy clayey, firm MH
4	15.0 to 16.0	48.7 to 47.7	Clay, red & grey, w/pockets to 1/2" of coarse-fine yellow brown sand CL
5	16.0 to 20.0	47.7 to 43.7	Sand, yellow brown medium - coarse quartz, trace - some claySC
6	20.0 to 25.0	43.7 to 38.7	Sand, tan, coarse-fine quartz, some clay SC
7	25.0 to 35.0	38.7 to 28.7	Sand, yellow brown, fine-medium quartz, trace-some silt SM
8	35.0 to 37.5	28.7 to 17.3	Sand, red brown, medium fine quartz, trace-some silt SP-SM
9	37.5 to 39.5	17.3 to 15.3	Sand, grey, medium-fine quartz trace-some silt, pockets of clay to 1" SP-SM & CL

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT - 1B

GROUND ELEVATION 58.7

LOCATION: Station 588+30, 350' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0.00 to 1.5	58.7 to 57.2	Sand, brown, fine quartz some silt SM
2	1.5 to 4.5	57.2 to 54.2	Sand, red-yellow brown & grey, fine quartz, clayey SC
3	4.5 to 9.0	54.2 to 49.7	Sand, light grey w/yellow brown fine quartz, clayey, stiff SC
4	9.0 to 20.5	49.7 to 38.2	Sand, red brown, fine-coarse quartz, clayey SC
5	20.5 to 22.5	38.2 to 36.2	Sand, yellow brown, medium to fine quartz, some silt, some layers & pockets of light grey silty clay SM
6	22.5 to 31.5	36.2 to 27.2	Sand, yellow brown fine to medium quartz, some layers and pockets of grey clay to 1" SM
7	31.5 to 37.5	27.2 to 21.2	Sand, red brown, fine-coarse quartz, trace of silt SP-SM
8	37.5 to 40.5	21.2 to 18.2	Sand, grey brown, medium to fine quartz trace-some silt, some pockets of light grey silt & dark grey clay SM

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. 2B

GROUND ELEVATION 54.8

LOCATION: Station 585+20, 1,110 Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	1.5 to 2.0	53.3 to 52.8	Clay, light grey, firm, some fine quartz CL
2	9.0 to 10.5	45.8 to 44.3	Sand, tan, fine quartz trace - some silt, some pockets clay to 1/4" SM
3	12.0 to 13.5	42.8 to 41.3	Sand, grey fine quartz trace - some silty clay, few cemented pockets to 1/2" SC
4	19.5 to 21.0	35.3 to 33.8	Sand, grey fine quartz trace - some silty clay SC
5	23.0 to 23.5	31.8 to 31.3	Sand, grey fine quartz some silt, partly cemented, few pockets clay to 1/2" SM

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-2B-1

GROUND ELEVATION 54.8

LOCATION: Station 585+20, 1,110' right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	0 to 1.5	54.8 to 53.3	Sand, brown-grey fine quartz, silty, clayey, some root material SC
2	1.5 to 3.0	53.3 to 51.8	Clay, tan-light grey, highly plastic, firm, trace of fine sand CH
3	3.0 to 4.5	51.8 to 50.3	Clay, grey, few small pockets to 1" of fine quartz sand, stiff CH
4	4.5 to 6.0	50.3 to 48.8	Clay, grey firm, fine sandv CH
5	6.0 to 6.5	48.8 to 48.3	Clay, grey firm, fine sandv CH
6	6.5 to 7.5	48.3 to 47.3	Sand, dark grey fine-medium quartz, silty clayey SC
7	7.5 to 8.5	47.3 to 46.3	Sand, dark grey, fine-medium quartz, silty clayey SC
8	8.5 to 9.0	46.3 to 45.8	Sand, dark grey fine-medium silty, clayey, mixed w/trace - some silt SC & SP-SM
9	9.0 to 10.5	45.8 to 44.3	Sand, layers to 1/2" of grey, fine-medium silty clayey sand & fine-coarse sand w/a trace to some silt, SC&SP-SM
10	10.5 to 12.0	44.3 to 42.8	Sand, tan-light grey, fine- medium quartz, trace-silt & clay SP-SM & SP-SC
11	12.0 to 13.5	42.8 to 41.3	Sand, tan, fine quartz trace - some silty clay occasional piece of gravel SC
12	13.5 to 15.0	41.3 to 39.8	Sand, tan & grey fine quartz, trace - some silty clay SP-SC
13	15.0 to 16.0	39.8 to 38.8	Sand, grey-tan, fine quartz, some clay, occasional pebble SC

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 54.8

HOLE NO. IT 2B-1

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
14	16.0 to 16.5	38.8 to 38.3	Sand, light grey fine quartz w/ layers and pockets to 1/4" dark grey clayey sand SP & SC
15	16.5 to 18.0	38.3 to 36.8	Sand, grey fine quartz, some silt, w/ layers & pockets to 1/4" of dark grey clay SM & CL
17	18.5 to 19.5	36.3 to 35.3	Sand, fine quartz, silty w/ discontinuous paper thin layers of clay SM
18	19.5 to 21.0	35.3 to 33.8	Sand-clay, marble cake mixture of fine-medium quartz & dark grey clay SP & CL
19	21.0 to 22.5	33.8 to 32.3	Sand grey fine-medium quartz, some silt clay, some clay pockets to 1/4" SC
20	22.5 to 24.0	32.3 to 30.8	Sand, grey fine-medium quartz, some silty clay, some 1/4" pockets of fine, clean sand SC
21	24.0 to 25.5	30.8 to 29.3	Clay dark grey, with paper thin layers of fine sand having a trace - some silt & clay CL
22	25.5 to 27.0	29.3 to 27.8	Silt, fine, sandy, some coarse shell, clayey, soft, sticky ML
23	27.0 to 28.5	27.8 to 26.3	Sand, grey fine quartz, clayey, silty, soft sticky SC & SM
24	28.5 to 30.0	26.3 to 24.8	Sand, grey, medium-fine quartz, some silt, occasional piece of gravel SM
25	30.0 to 31.5	24.8 to 23.3	Sand, grey, medium-fine, quartz, trace - some silt, some paper thin layers of dark grey clay SM & CL

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BY J.R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

GROUND ELEVATION 54.8

HOLE NO. IT 2B-1

<u>Sample No.</u>	<u>Depth In feet</u>	<u>Elevation</u>	<u>Description</u>
26	31.5 to 33.0	23.3 to 21.8	Sand, grey, fine-medium quartz some silt SM
27	33.0 to 34.5	21.8 to 20.3	Sand, grey, fine, quartz, some silt w/layers to 1/8" of dark grey clay, sticky SM&CL
28	34.5 to 36.0	20.3 to 18.8	Sand, grey medium-fine quartz, some pebbles & layers to 1/4" of dark grey, clay SM&CL
29	36.0 to 37.5	18.8 to 17.3	Sand, grey fine-coarse quartz, clayey, soft, sticky, occasional piece of gravel SC
30	37.5 to 38.0	17.3 to 16.8	Sand, grey, coarse - fine, some clayey silt, occasional coarse shell & fine gravel SM
31	38.0 to 39.0	16.8 to 15.8	Clay, dark grey w/paper thin layers of fine sand CL
32	39.0 to 40.3	15.8 to 14.3	Clay-sand, layers to 1/4" of dark grey clay & fine light grey quartz sand CL&SP
33	40.5 to 41.5	14.3 to 13.3	Clay-sand, layers to 1/4" of dark grey clay & fine light grey, quartz, sand CL&SP
	41.5 to 51.5	13.3 to 3.3	No recovery
34	52.5 to 53.5	2.3 to 1.3	Sand, light grey, fine quartz SP
35	55.0 to 56.5	-0.2 to -1.7	Sand, light grey, fine quartz SP

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BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-2C

GROUND ELEVATION 58.0

LOCATION: Station 582+62, 670' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	1.0 to 5.0	57.0 to 53.0	Sand, yellow-red brown, fine, quartz, silty clayey SC
2	5.0 to 10.0	53.0 to 48.0	Sand, yellow & red brown, fine quartz, clayey, stiff SC
3	10.0 to 15.0	48.0 to 43.0	Clay, with 1/4" - 1/8" layers of fine clayey sand CL
4	15.0 to 20.0	43.0 to 38.0	Sand, yellow brown, coarse-fine, quartz, some silty, clay SC
5	20.0 to 24.0	38.0 to 34.0	Sand, yellow brown, coarse fine quartz, some silty, clay, occasional rounded, gravel SC
6	24.0 to 30.0	34.0 to 28.0	Sand, yellow brown, fine quartz, some pockets & discontinuous paper thin layers of clay, trace-some silt SM

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-2D

GROUND ELEVATION 58.9

LOCATION: Station 579+70, 1,440' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	1.0 to 5.0	57.9 to 53.9	Sand, brown-grey, fine quartz, trace to some silt, some pockets to 1/4" of clayey sand SM
2	5.0 to 10.0	53.9 to 48.9	Sand, light grey, fine quartz, clayey, stiff SC
3	10.0 to 15.0	48.9 to 43.9	Sand, yellow brown, coarse-fine quartz, some clay SC
4	15.0 to 20.0	43.9 to 38.9	Sand, yellow brown, fine quartz, trace-some silt, numerous clay pockets to 1/4" SM
5	20.0 to 22.5	38.9 to 36.4	Sand, grey, medium-fine, quartz, some layers of dark grey clay to 1/8" trace - some silt SM&CL
6	22.5 to 24.0	36.4 to 34.9	Sand, light grey, fine-medium quartz, trace of medium-coarse shell, some silty clay, some cementing SC

BY J. R. HARRIS

COOPER RIVER
REDIVERSION PROJECT
SUPPLEMENTARY LOG

HOLE NO. IT-2E

GROUND ELEVATION 66.1

LOCATION: Station 577+10, 1,000' Right Centerline

<u>Sample No.</u>	<u>Depth In Feet</u>	<u>Elevation</u>	<u>Description</u>
1	1.0 to 4.5	65.1 to 61.6	Sand, tan, fine, quartz, trace silt, some pockets to 1/8" of orange brown clay SM
2	5.0 to 7.5	61.1 to 58.6	Clay, yellow-red brown & light grey, fine, sandy firm CL
3	10.0 to 12.0	58.6 to 54.1	Clay, yellow-red brown, & light grey, silty, stiff CL
4	12.0 to 19.5	54.1 to 46.6	Sand, yellow brown, medium-coarse, some clay SC
5	19.5 to 30.0	46.6 to 36.1	Sand, yellow brown & light grey, fine, quartz, some silty, clay SC
6A	30.0 to 31.0	36.1 to 35.1	Limestone, medium to fine quartz and coarse-fine, shell cemented w/calcareous cement, some pockets of fine sand
6B	38.2 to 39.7	27.9 to 26.4	Sand, tan-brown, medium-fine quartz w/ some pockets to 1/8" of grey clay SP

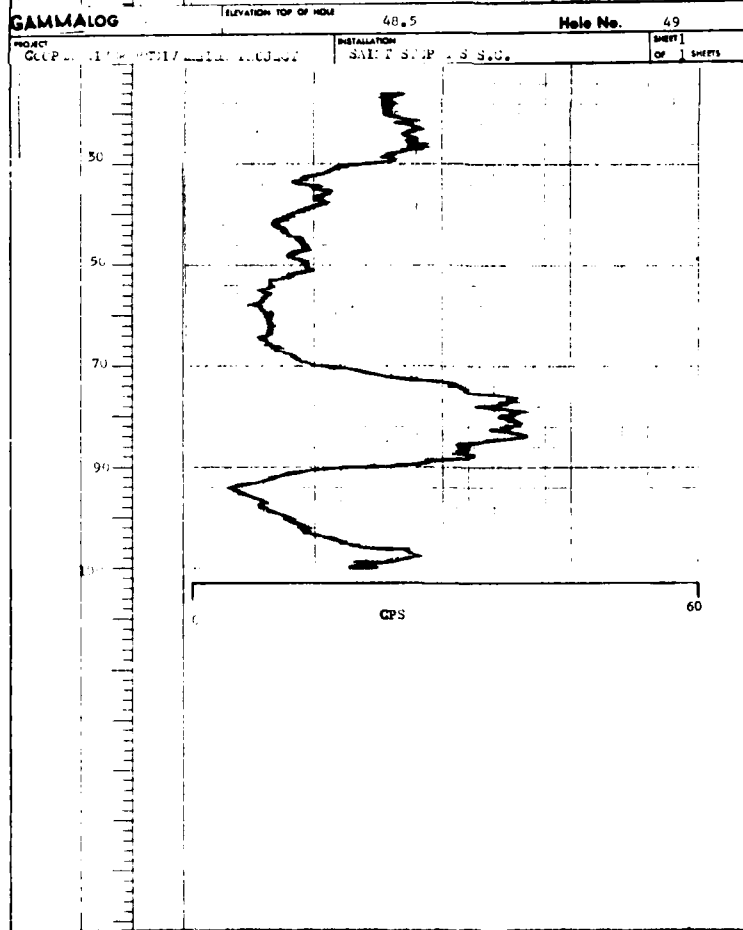
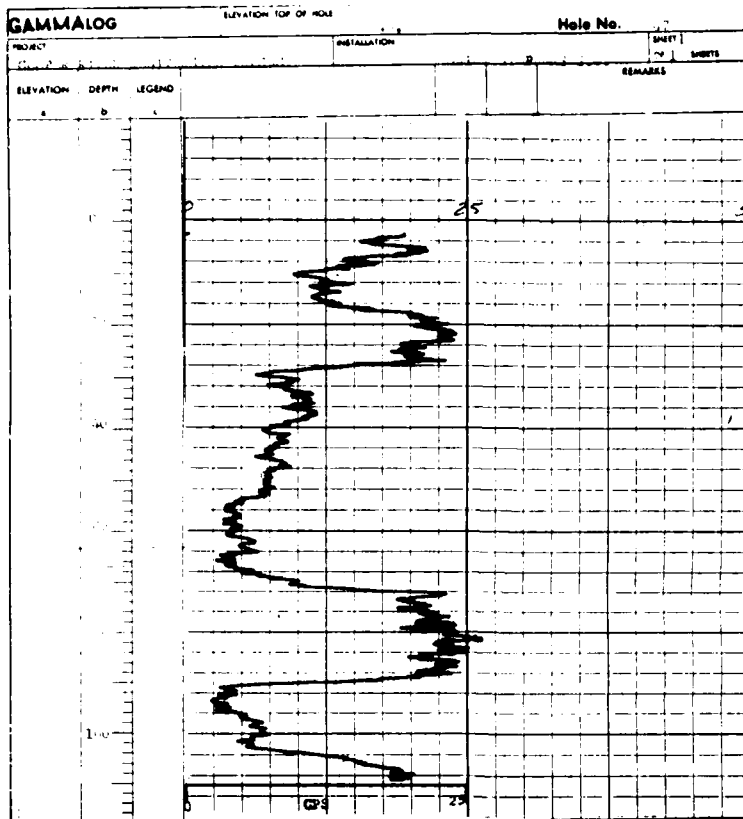
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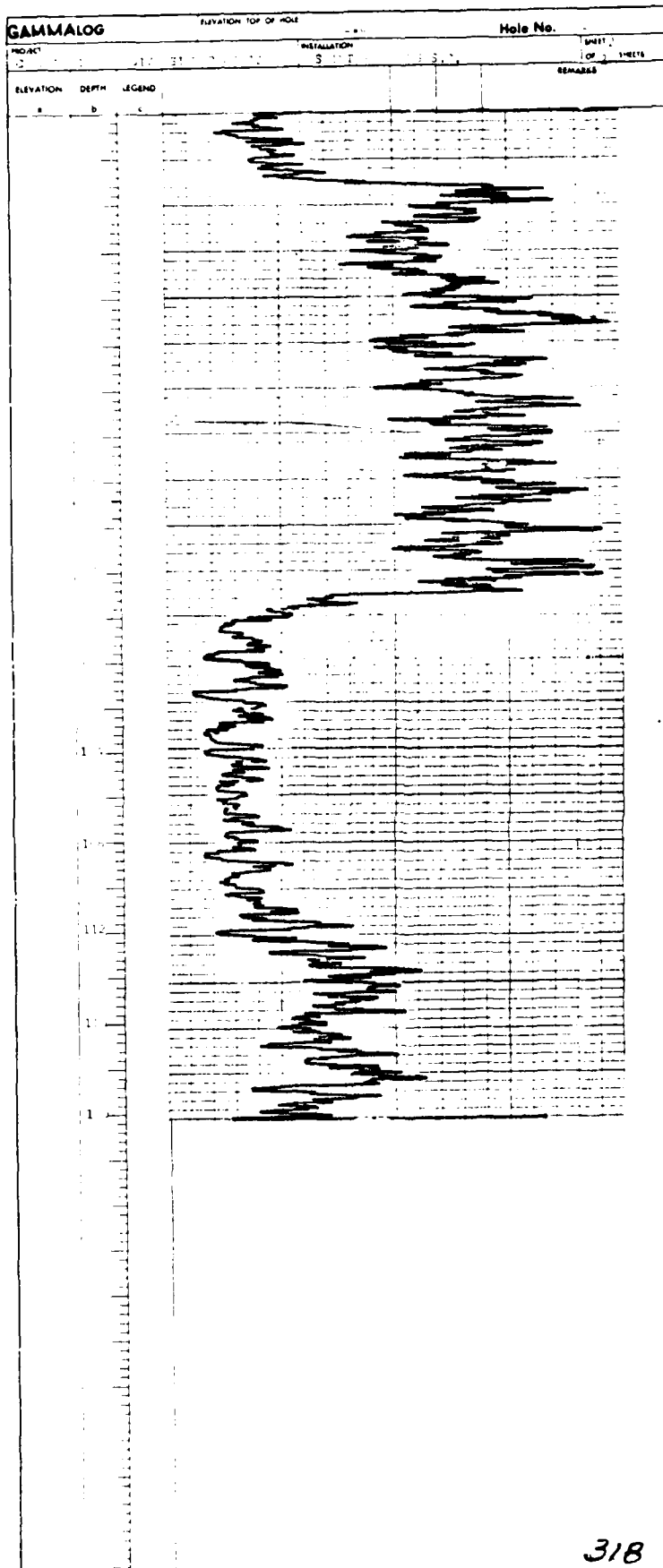
COOPER RIVER REDIVERSION PROJECT
POWERHOUSE FOUNDATION ANALYSIS

SECTION 4

GAMMA LOGS

U.S. ARMY ENGINEERING DISTRICT, SAVANNAH
CORPS ON ENGINEERS
SAVANNAH, GEORGIA
FEBRUARY 1976





GAMMALOG

ELEVATION TOP OF HOLE

Hole No.

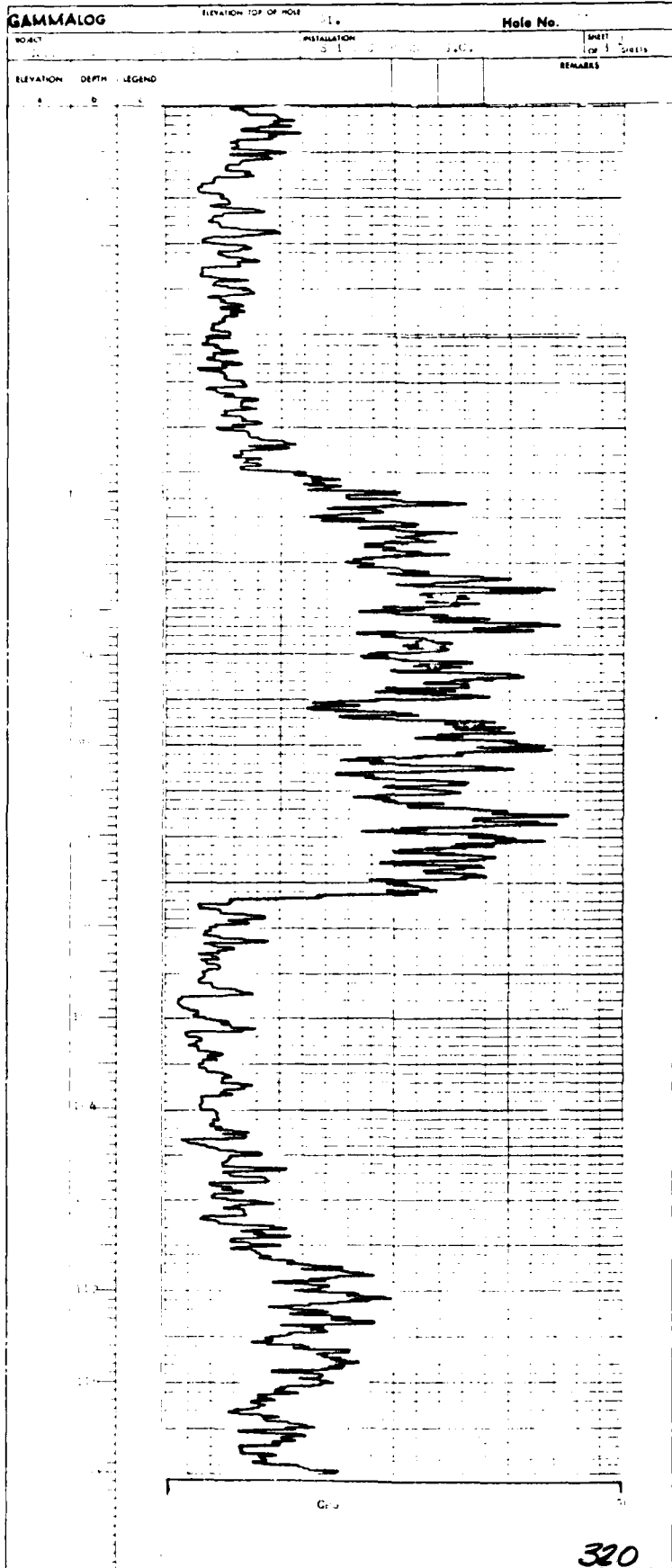
PROJECT

INSTALLATION

SHEET OF SHEETS

REMARKS

ELEVATION	DEPTH	LEGEND
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GAMMALOG

ELEVATION TOP OF HOLE

4.7

Hole No. 95

PROJECT

RESEARCH AND DEVELOPMENT

INSTALLATION

ALBUQUERQUE, N.M.

SHEET

OF 2 SHEETS

ELEVATION

DEPTH

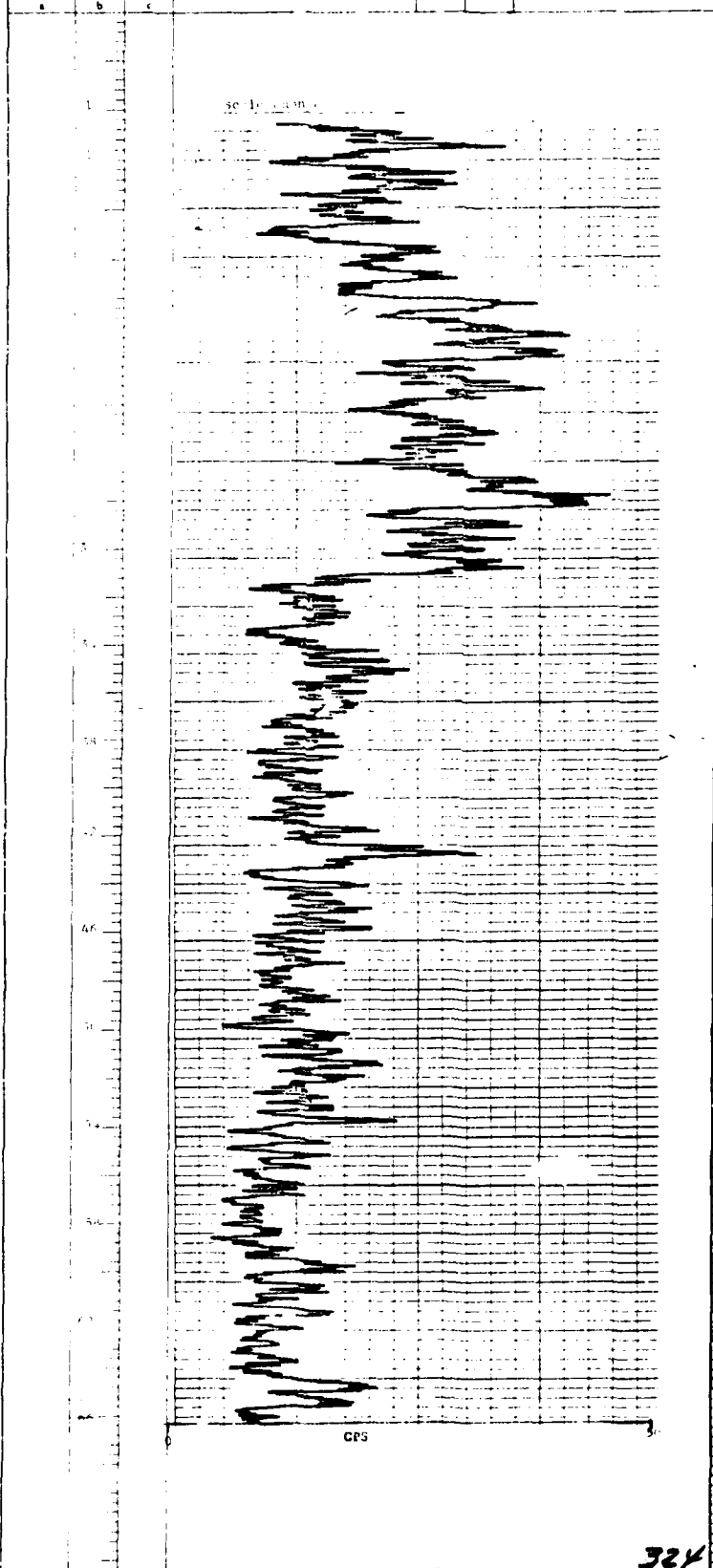
LEGEND

REMARKS

a

b

c



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GAMMALOG

ELEVATION TOP OF HOLE

Hole No.

NO. OF

INSTALLATION

SHEET

ELEVATION

DEPTH

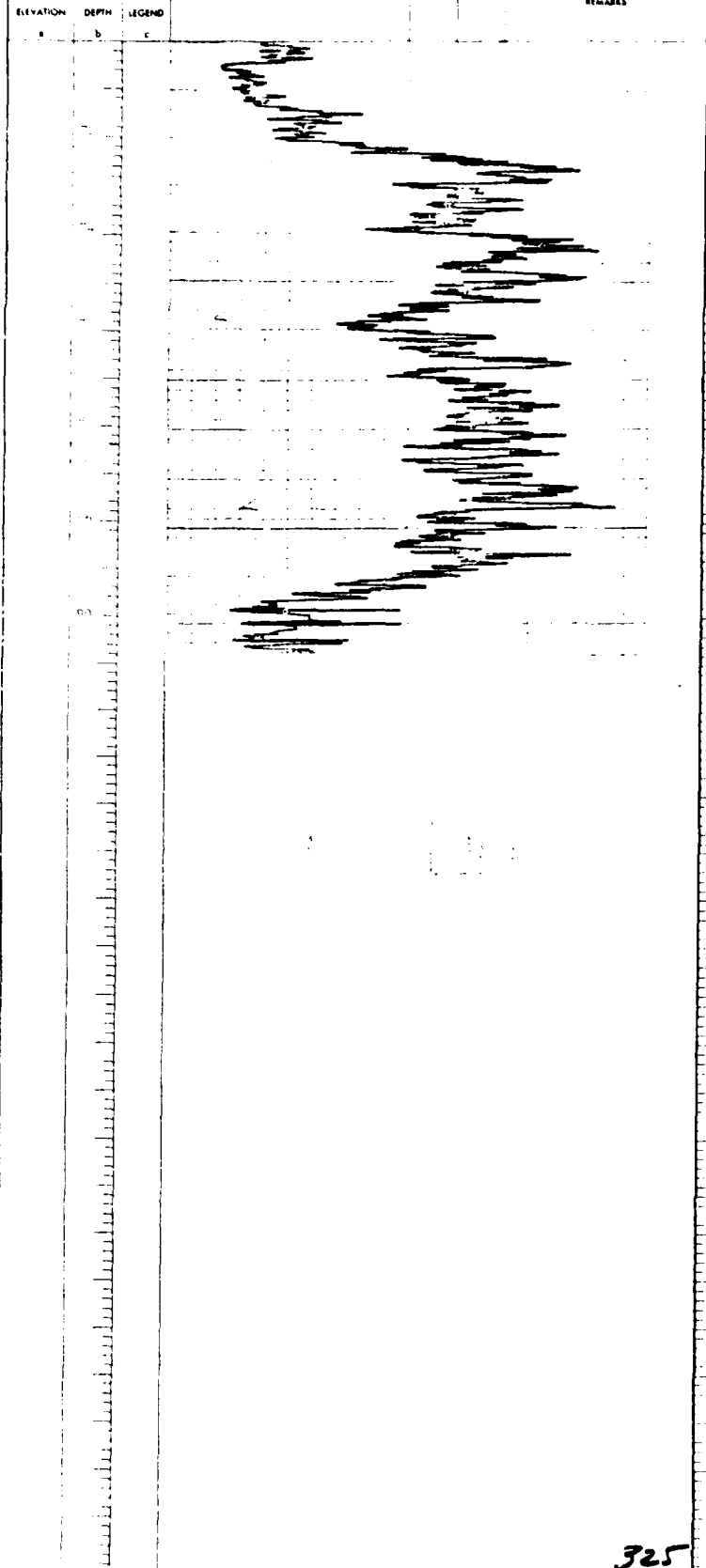
LEGEND

REMARKS

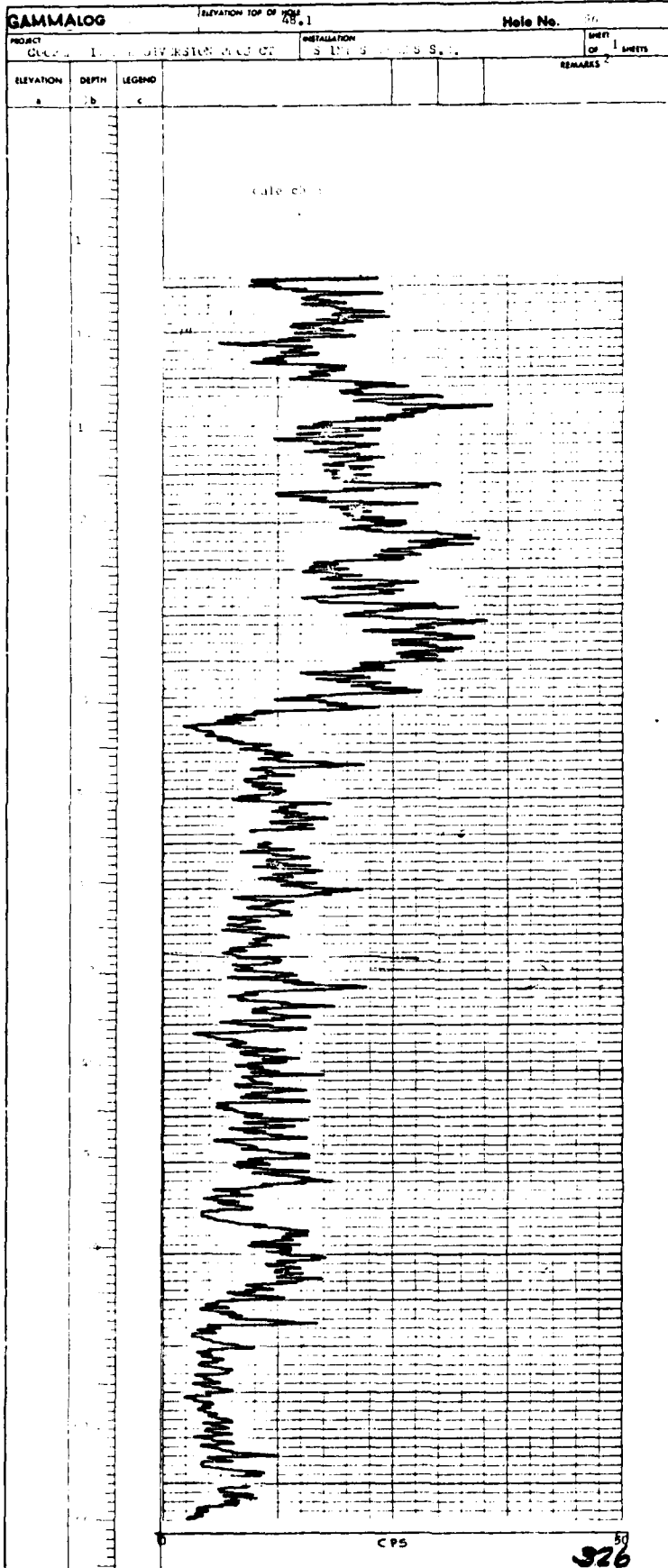
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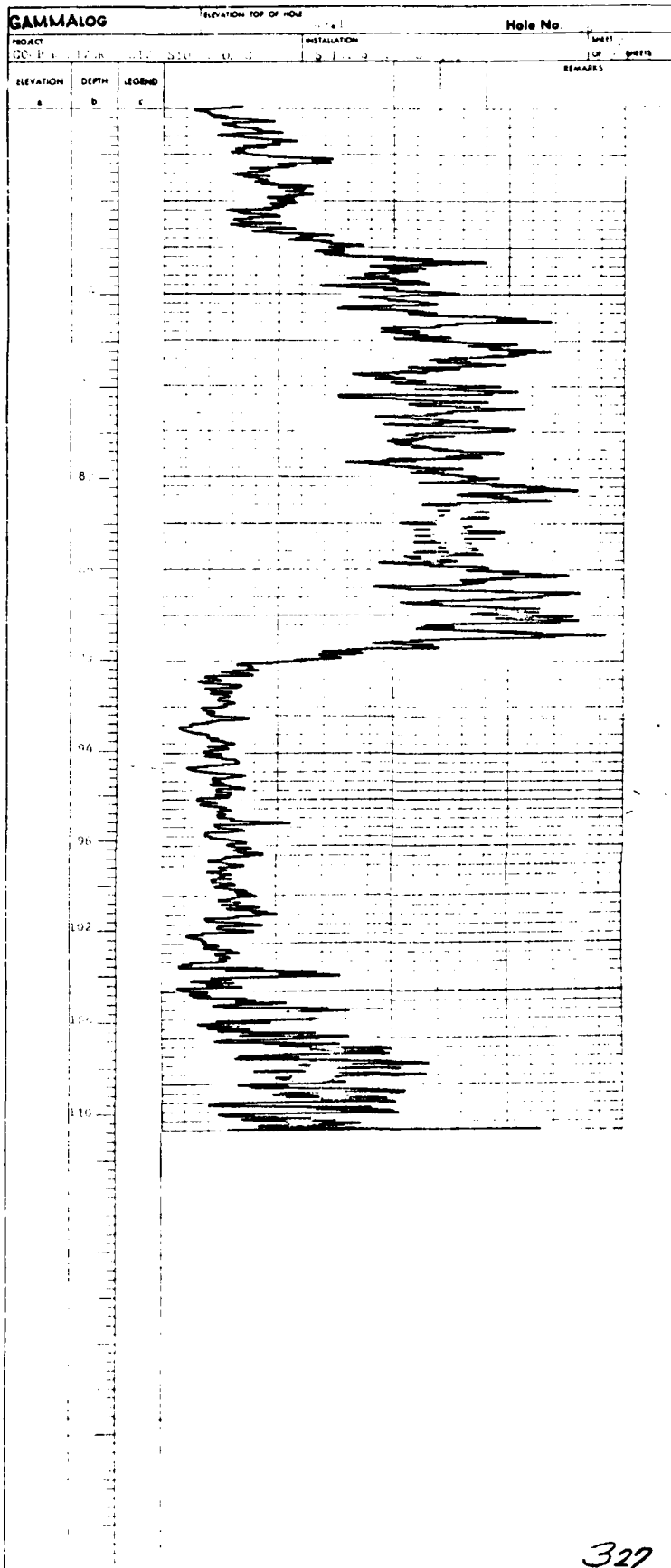
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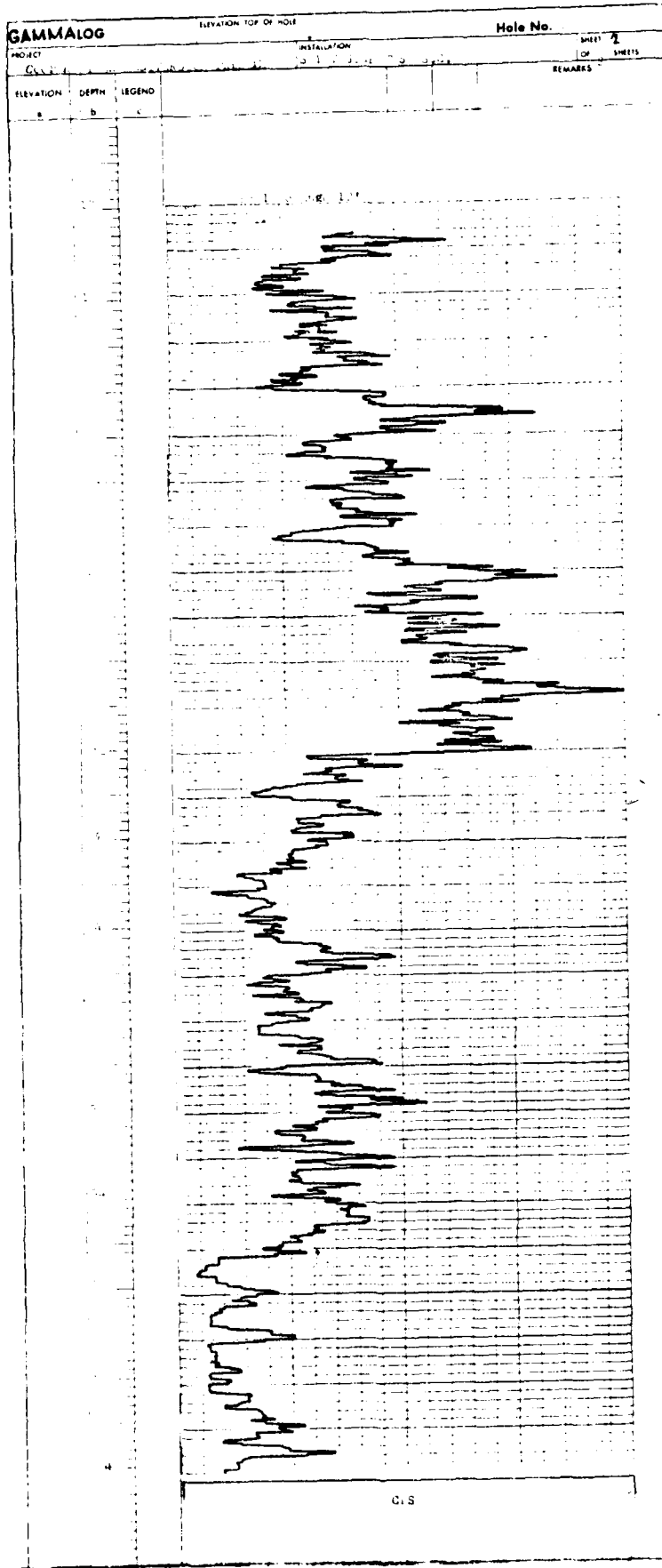
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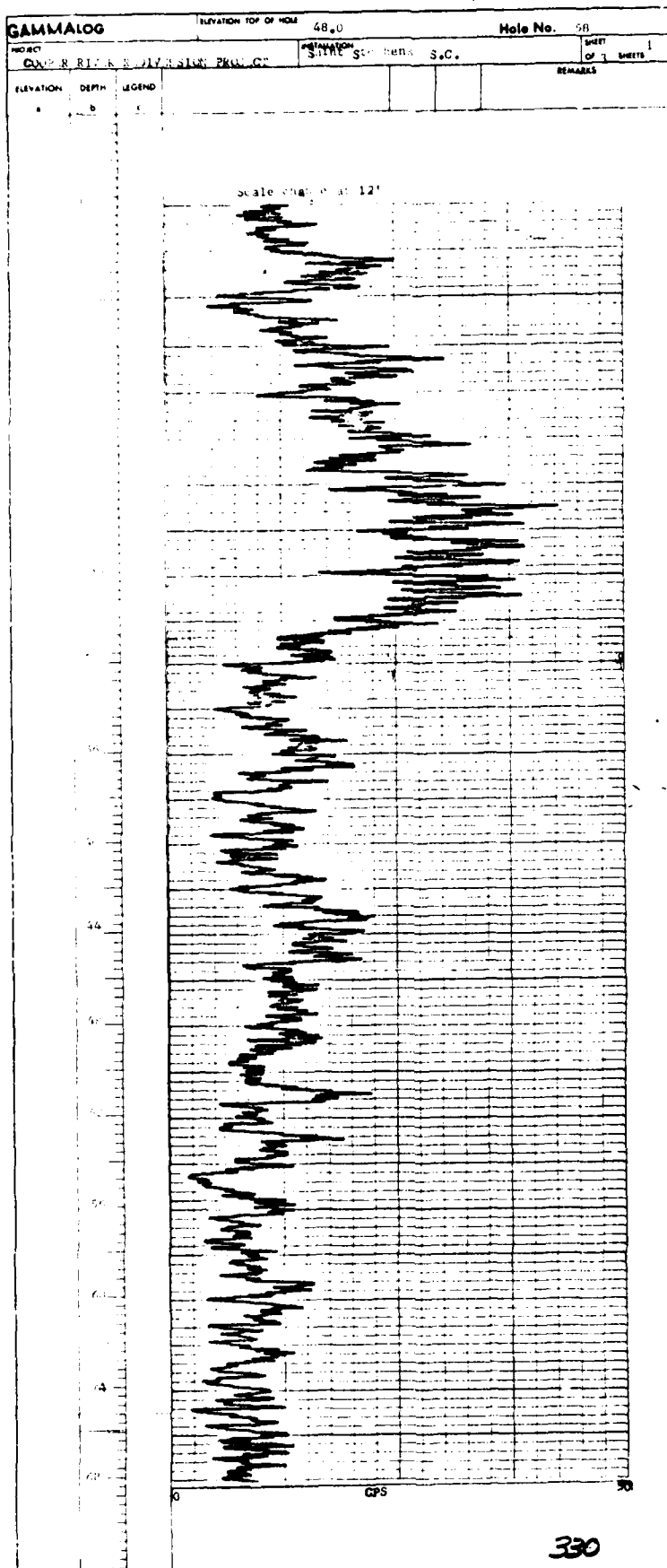


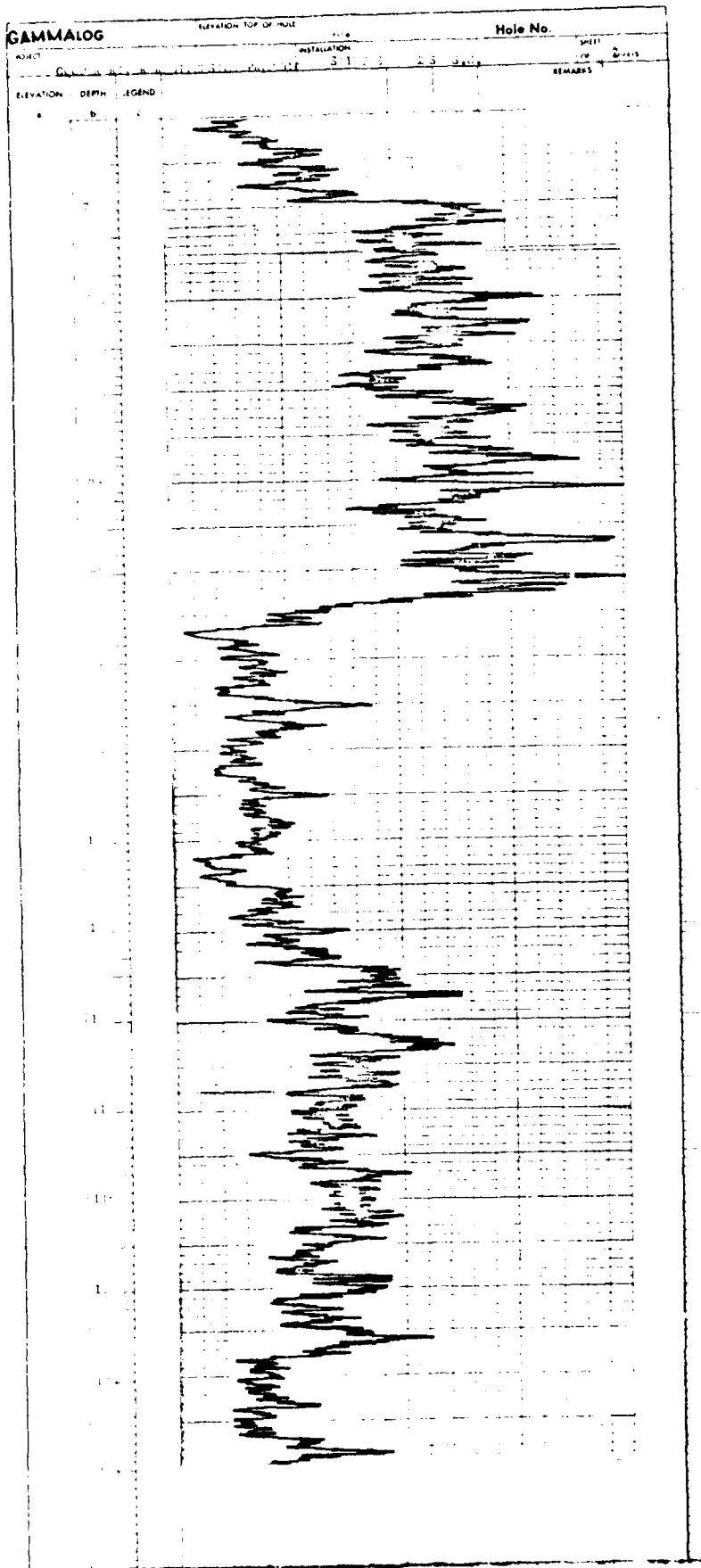
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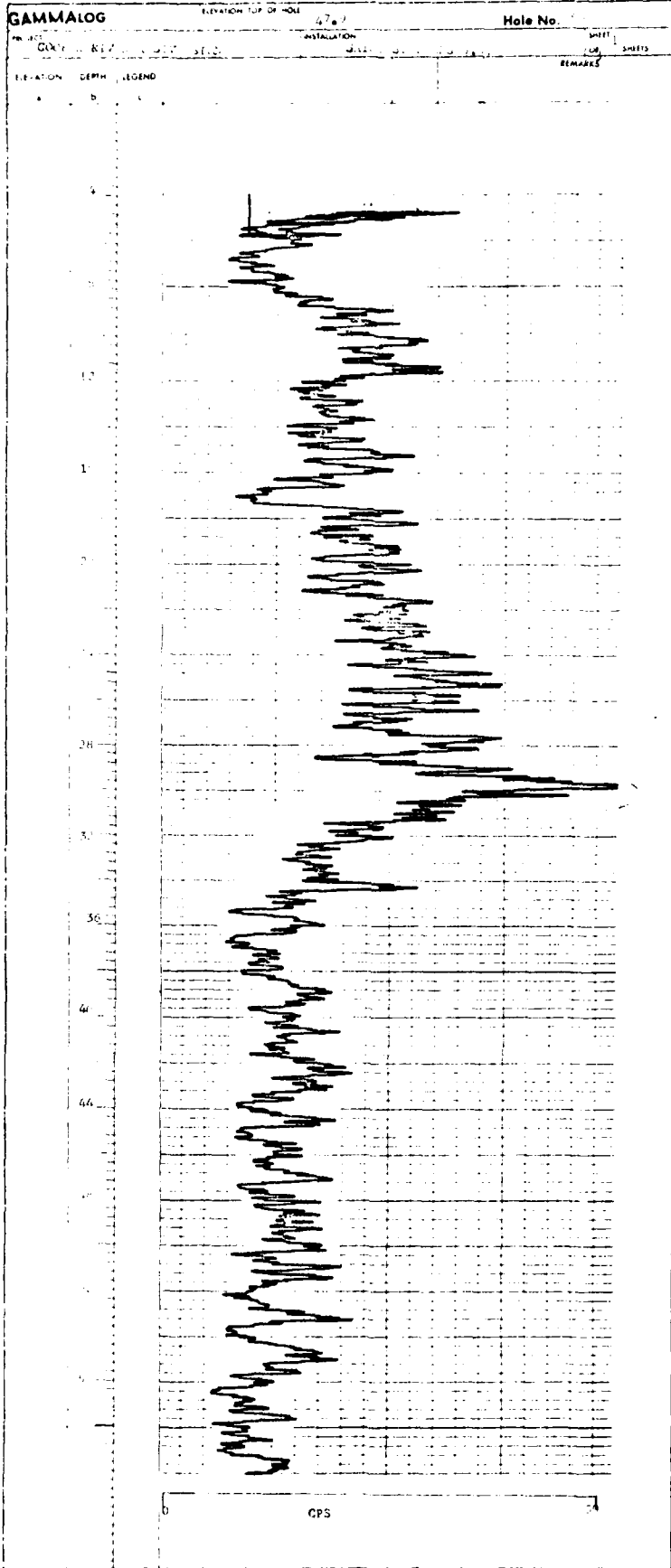


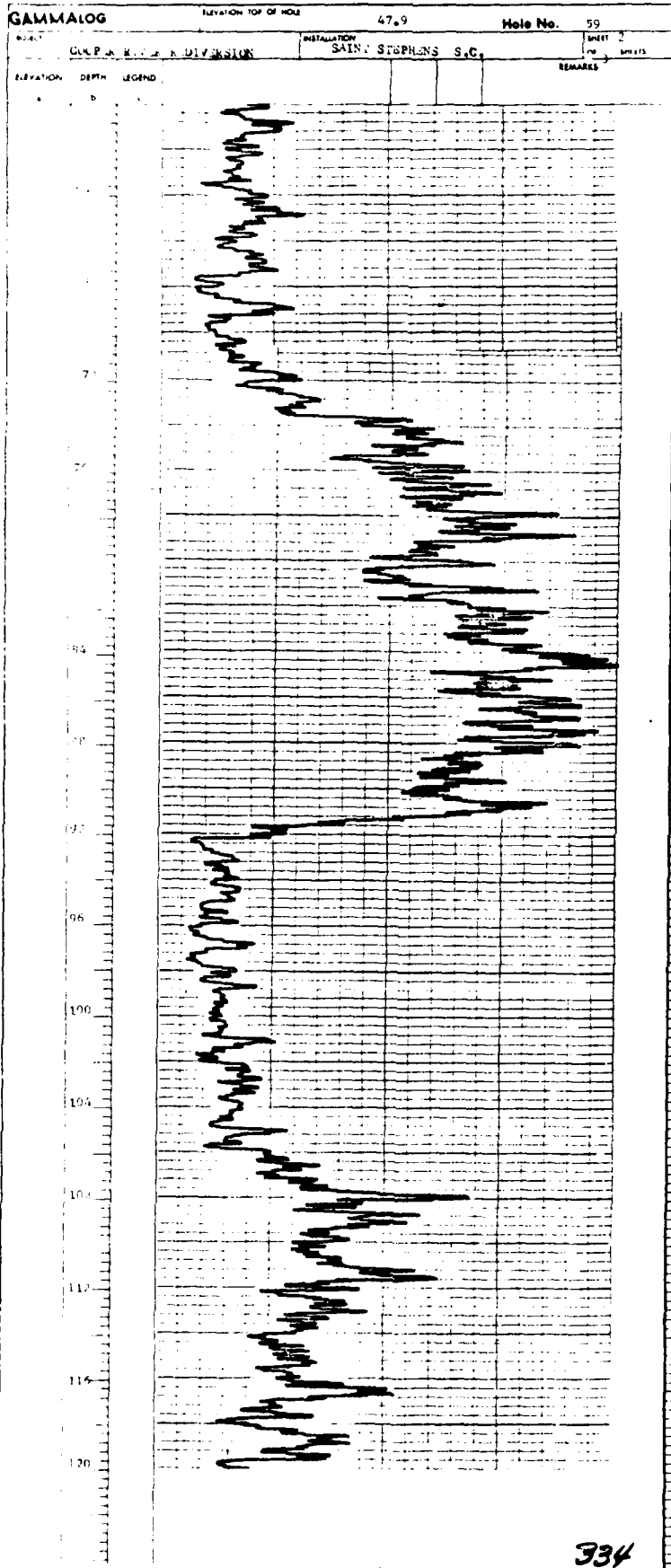






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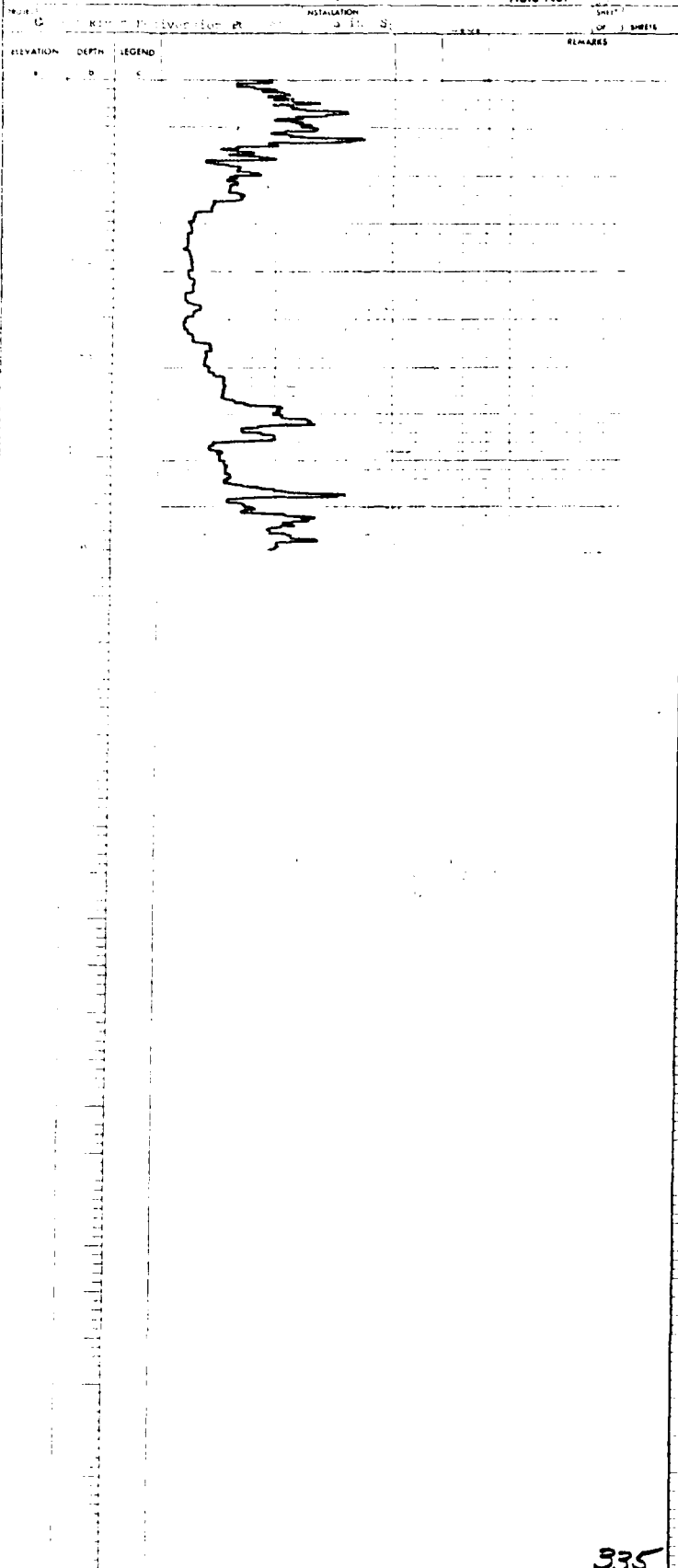




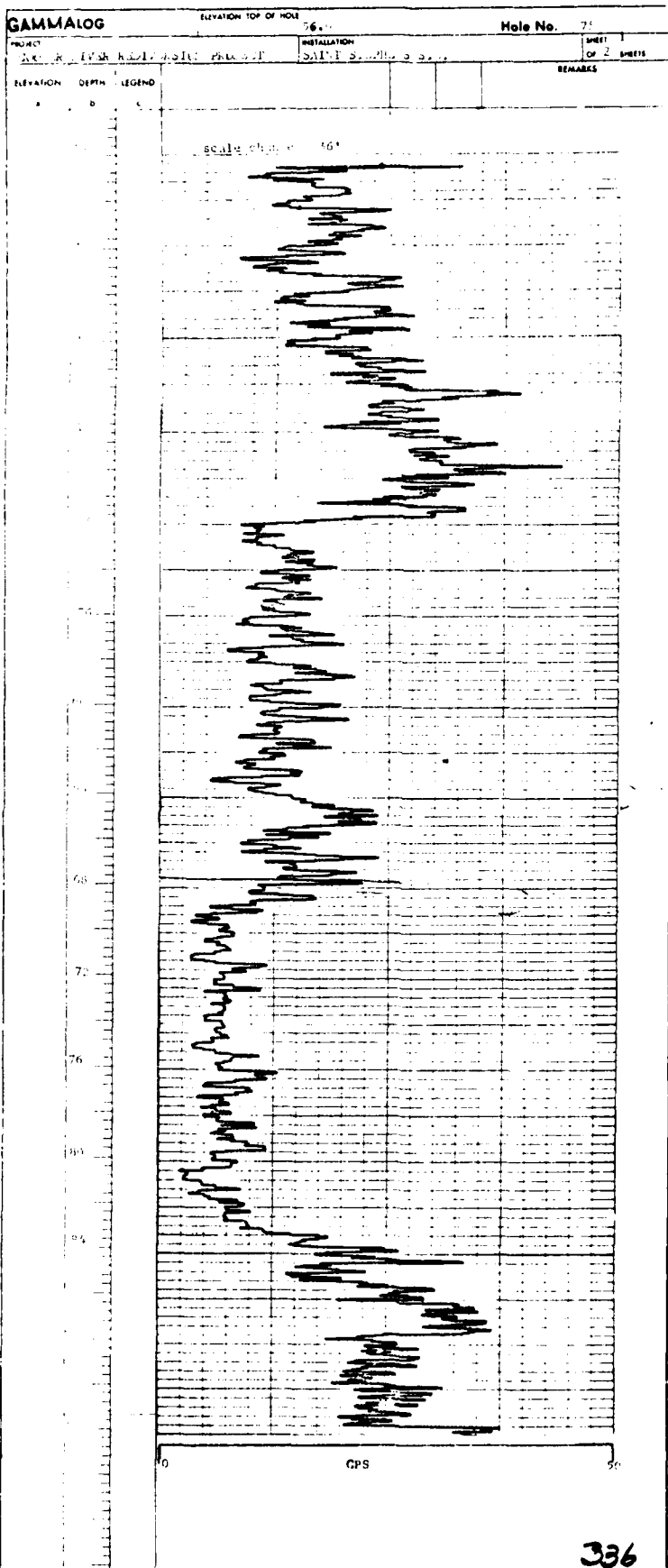
GAMMALOG

ELEVATION TOP OF HOLE

Hole No.



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GAMMALOG

ELEVATION TOP OF HOLE

Hole No.

PROJECT

INSTALLATION

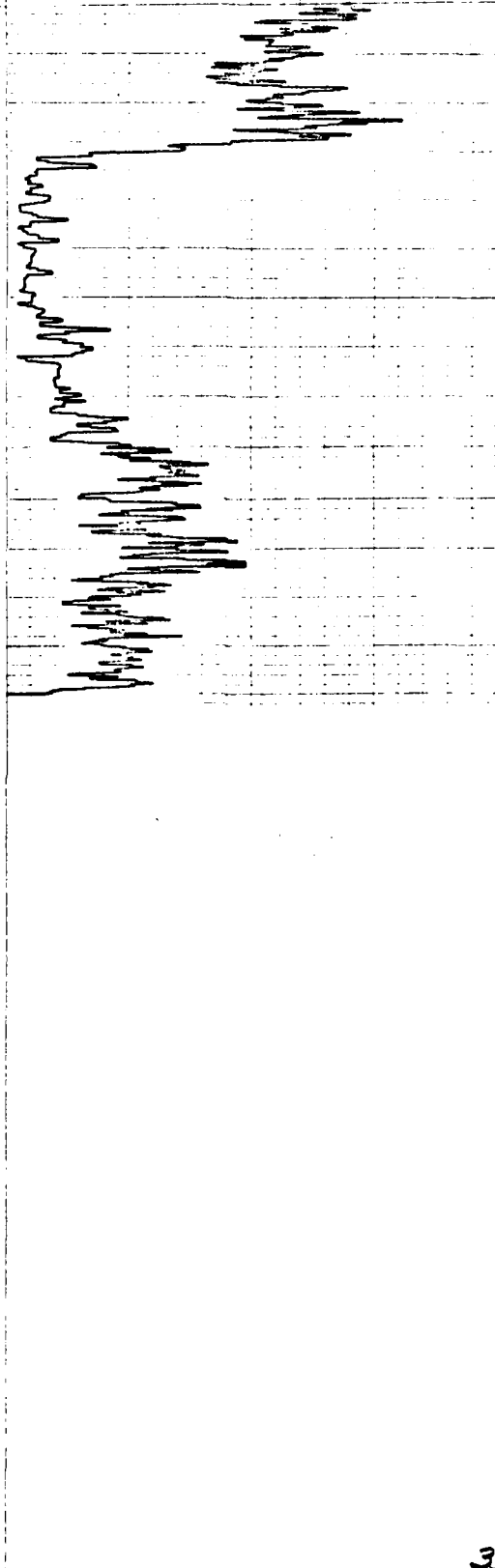
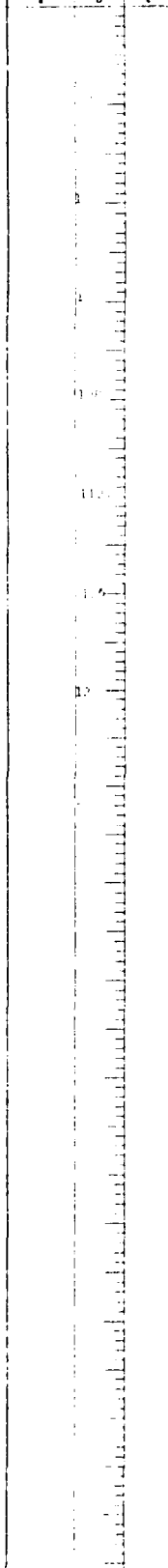
SHEET

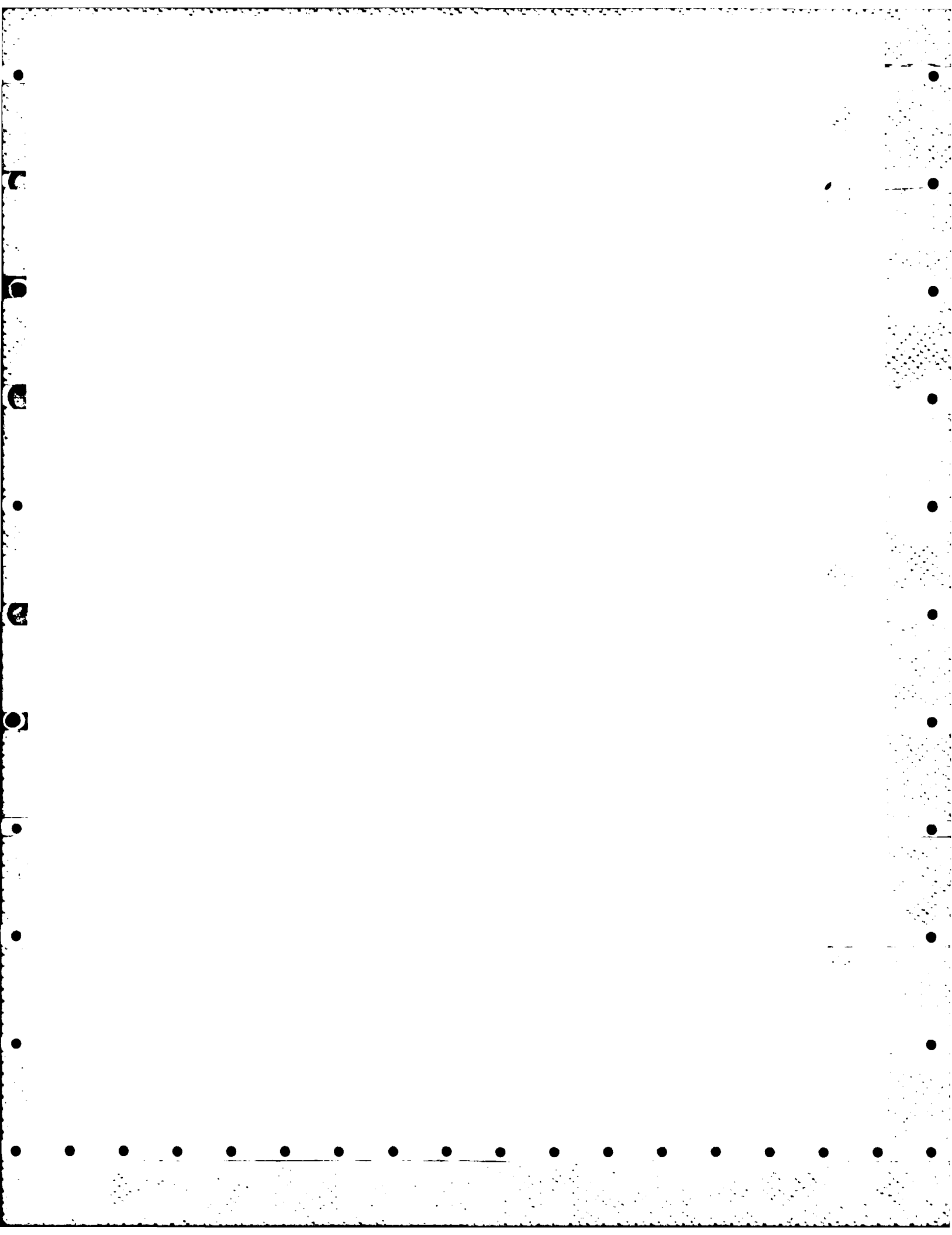
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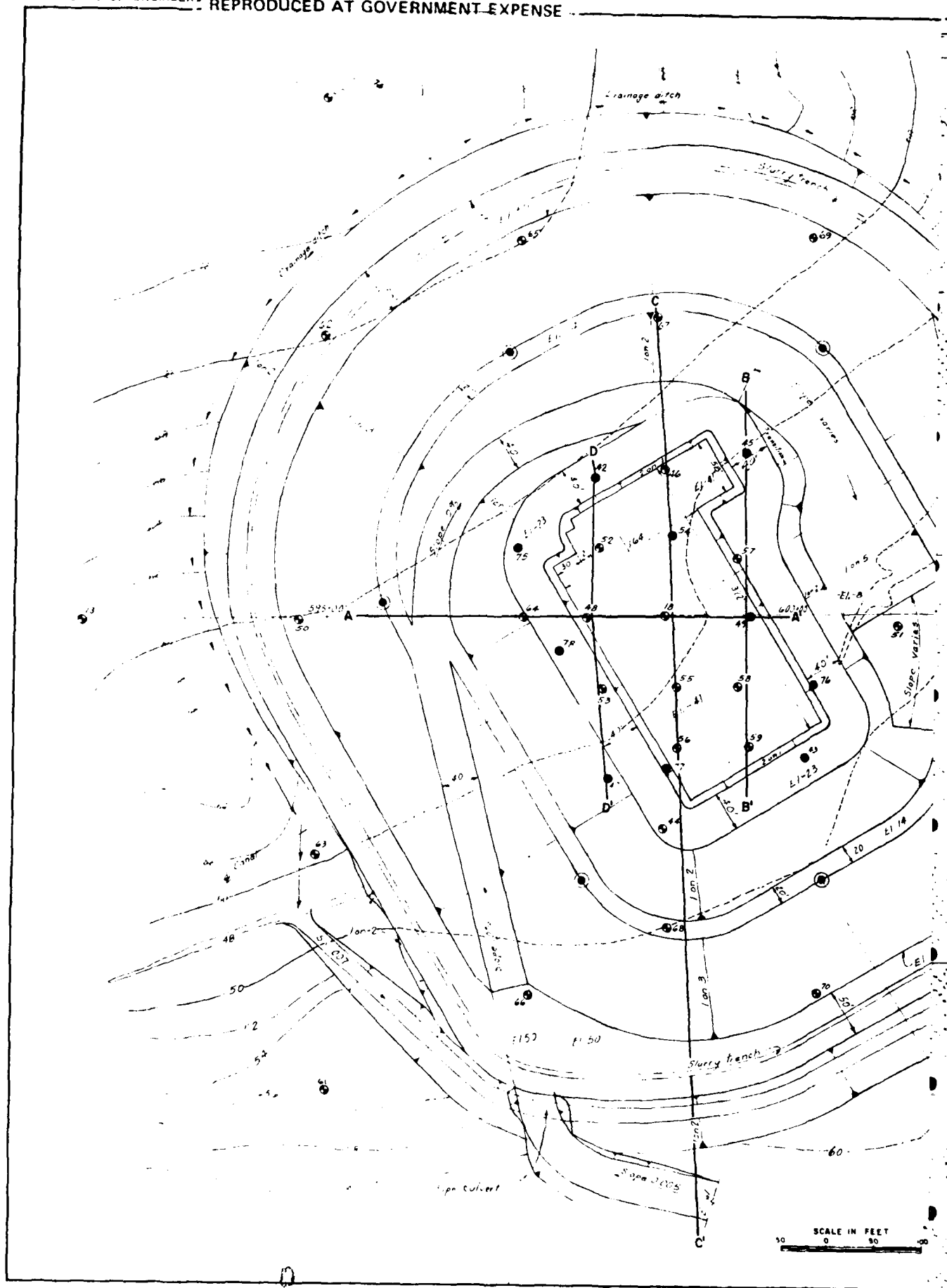
ELEVATION DEPTH LEGEND

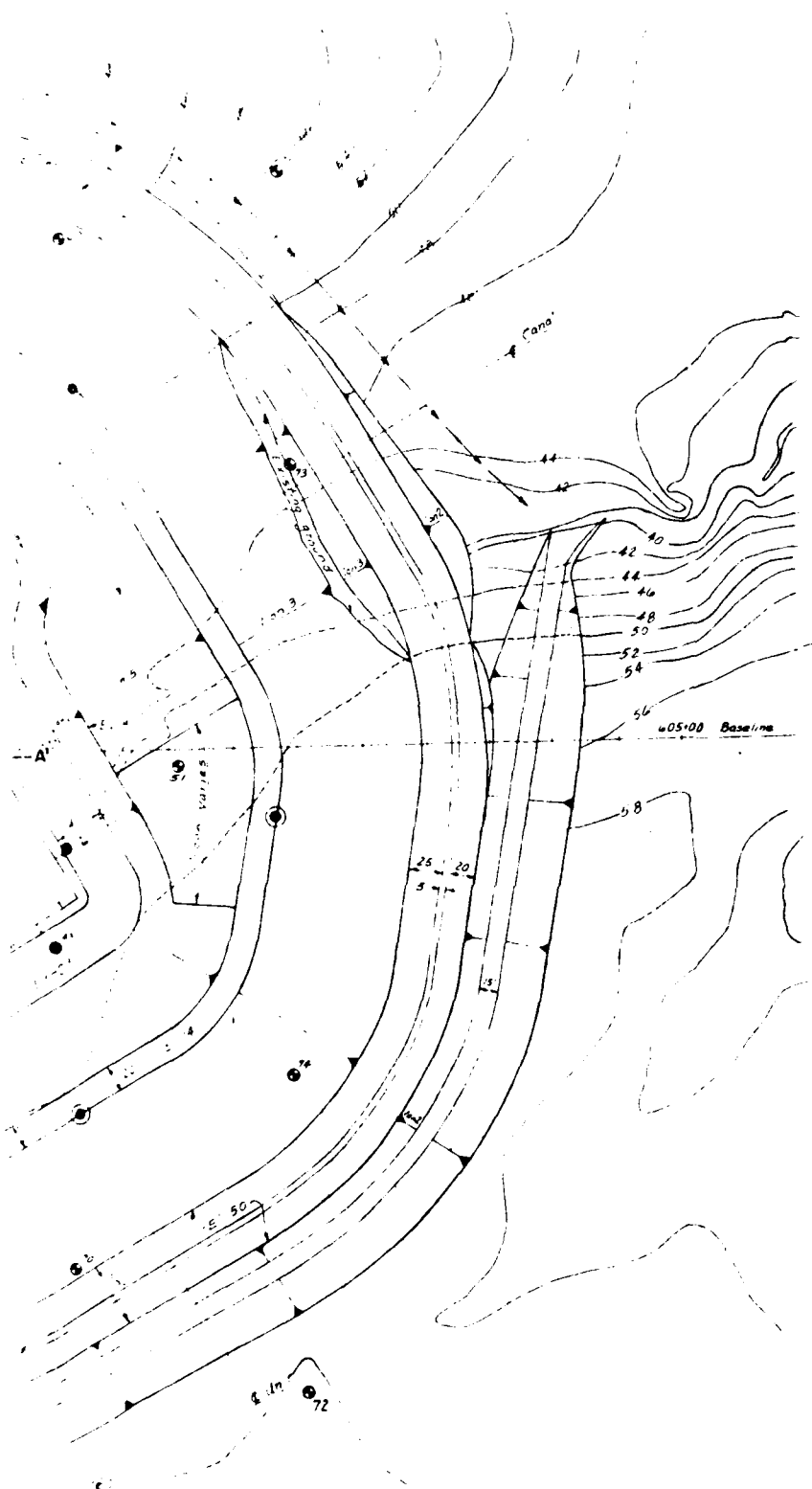
REMARKS

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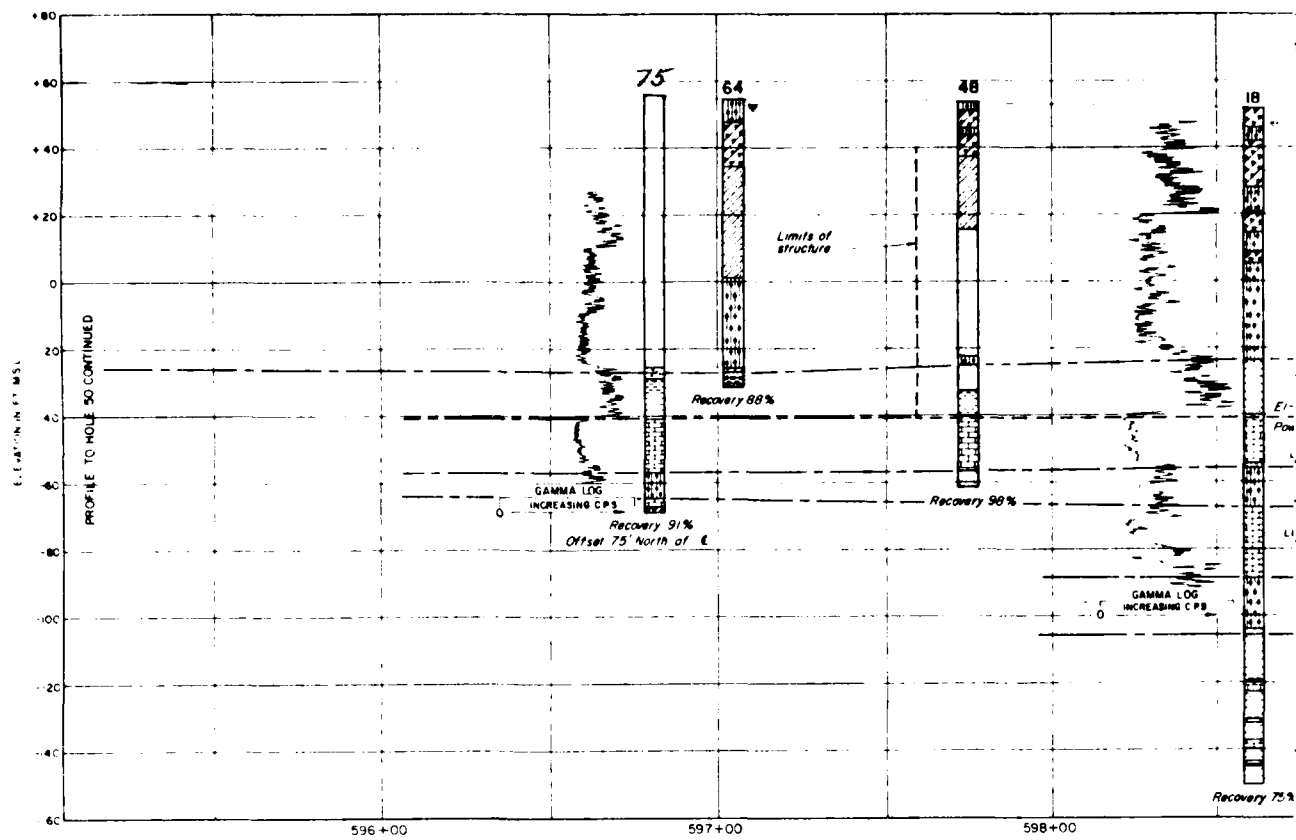




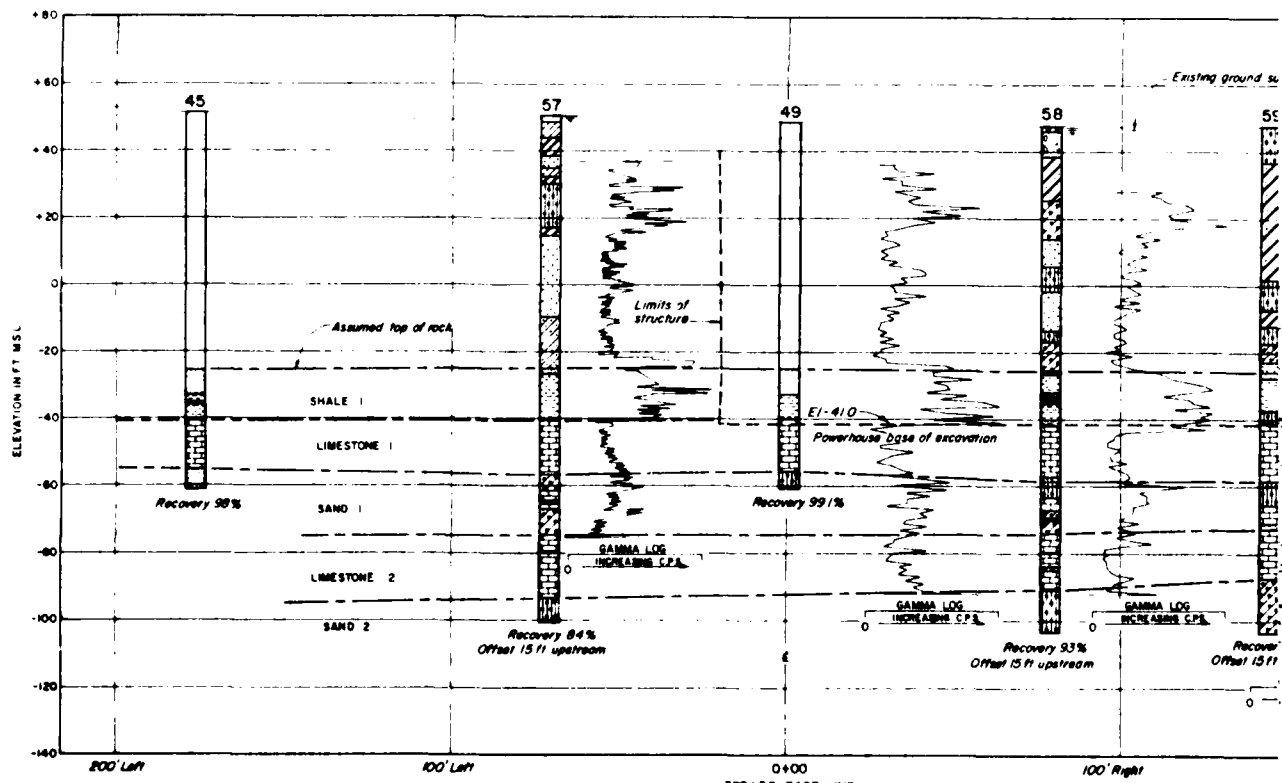
LEGEND

- Construction dewatering well 24" dia
- Drill hole (sampled throughout depth)
- Drill hole (overburden not sampled, rock cores only)

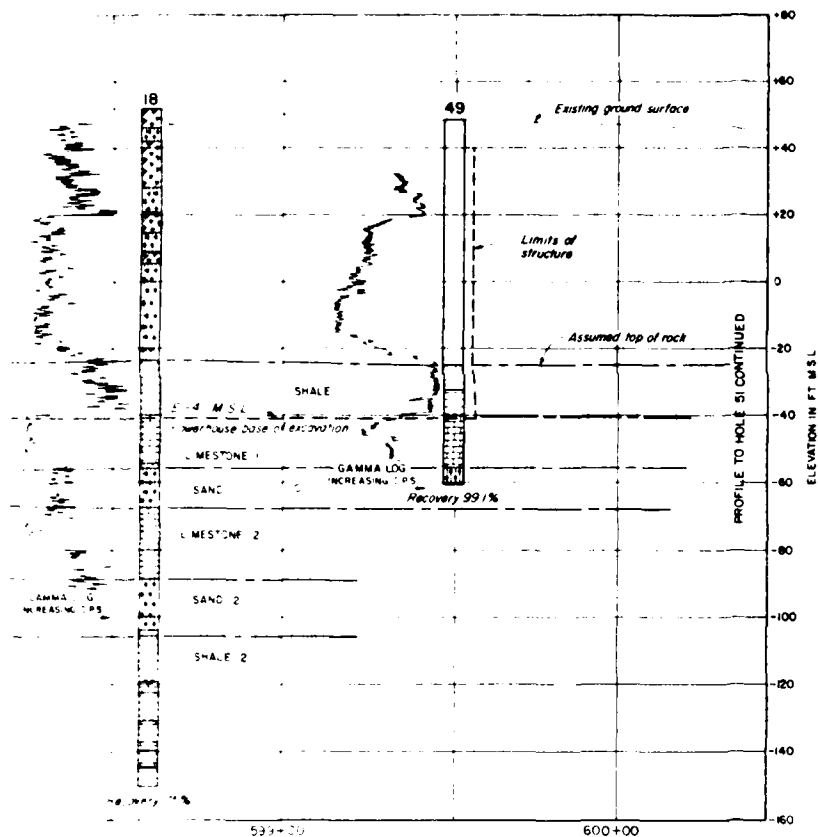
U.S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA		U.S. ARMY ENGINEER DISTRICT, CHARLESTON CORPS OF ENGINEERS CHARLESTON, SOUTH CAROLINA	
POWERHOUSE FOUNDATION ANALYSIS APPENDIX A			
EXCAVATION AND BORING LOCATION PLAN			
LAKE MOUTRIE AND SANTEE RIVER SOUTH CAROLINA			
DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY
SCALE AS SHOWN		DATE 9 MAR 1970 FILE 08000/084	



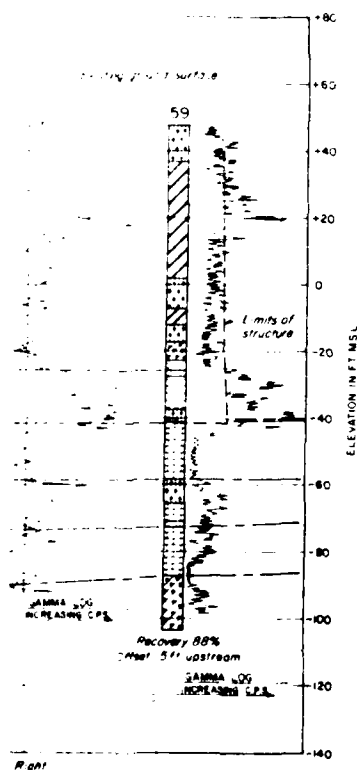
GEOLOGIC PROFILE ALONG BASELINE THRU POWERPLANT (A-A)



GEOLOGIC SECTION AT BASELINE STA 599+50 (B-B')



PLANT AREA

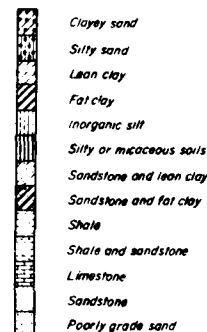


Right

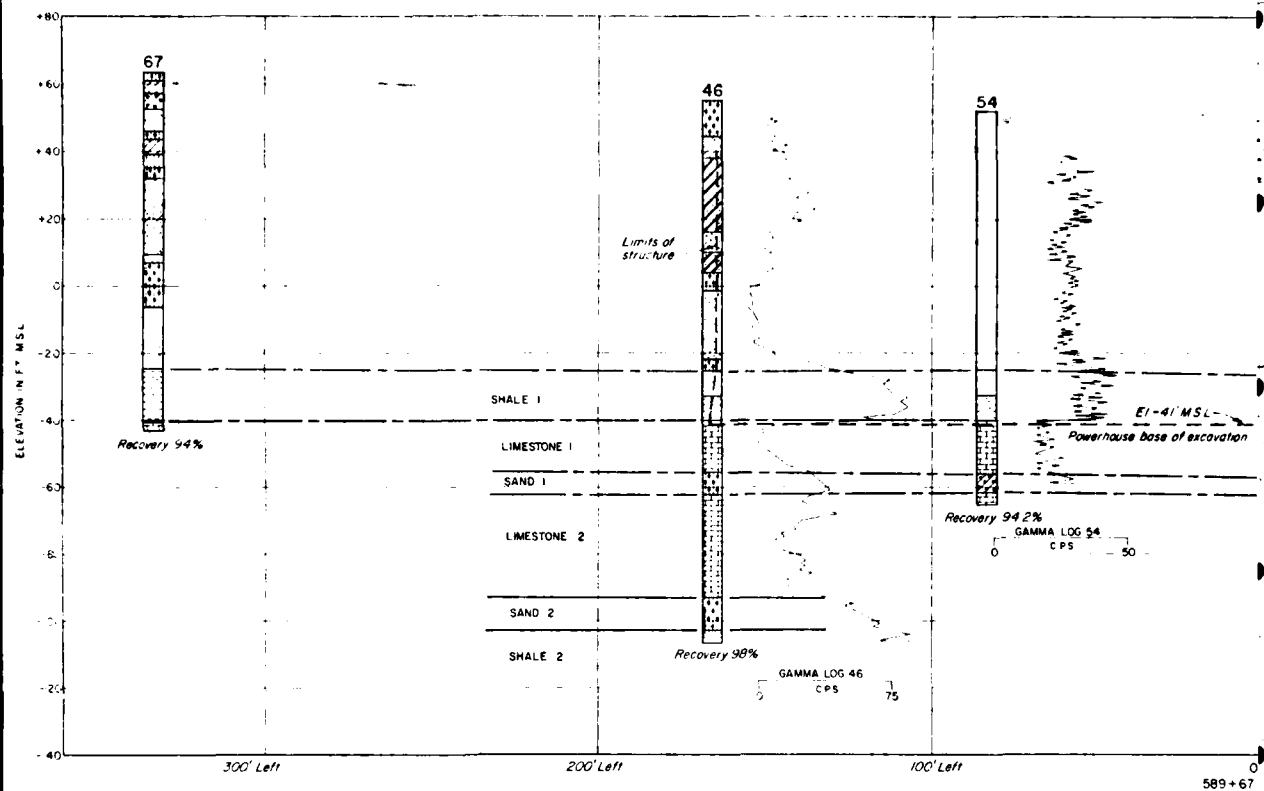
NOTE

For boring and section locations see plate 1

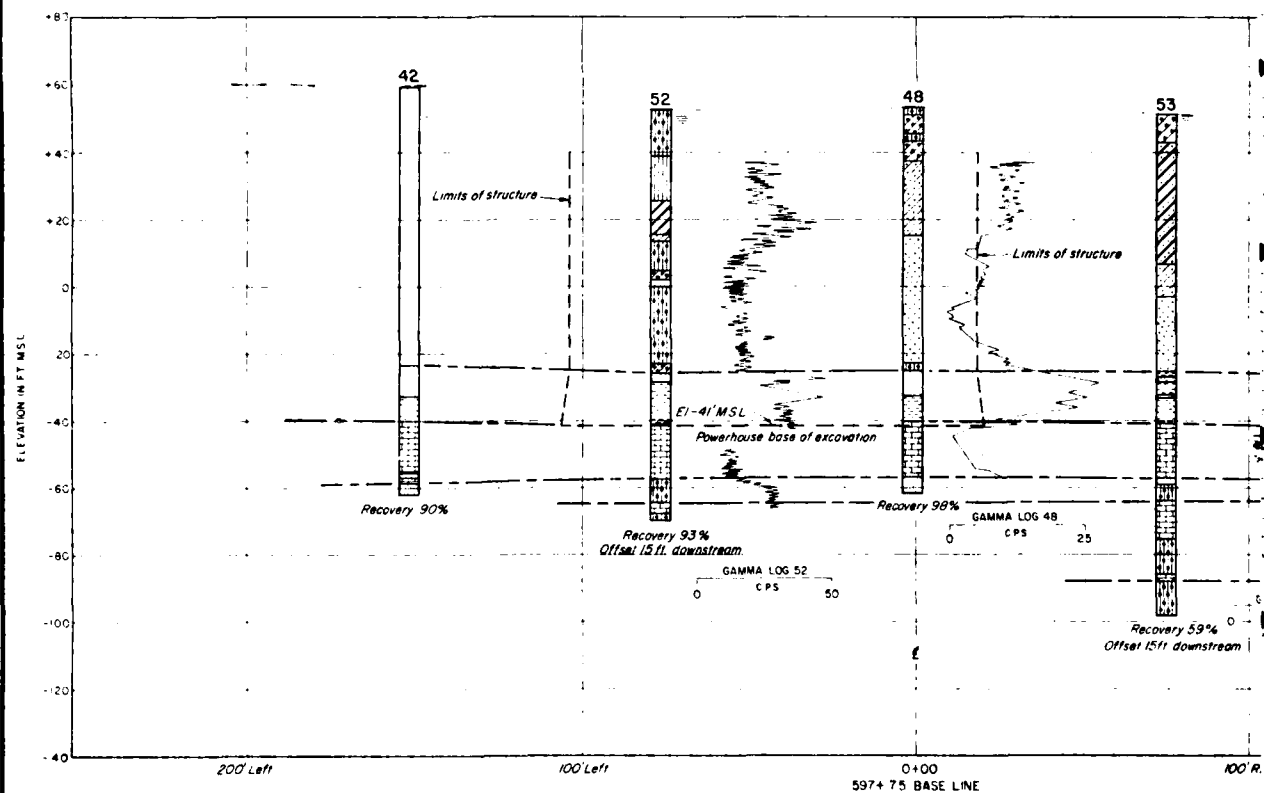
BORING LEGEND



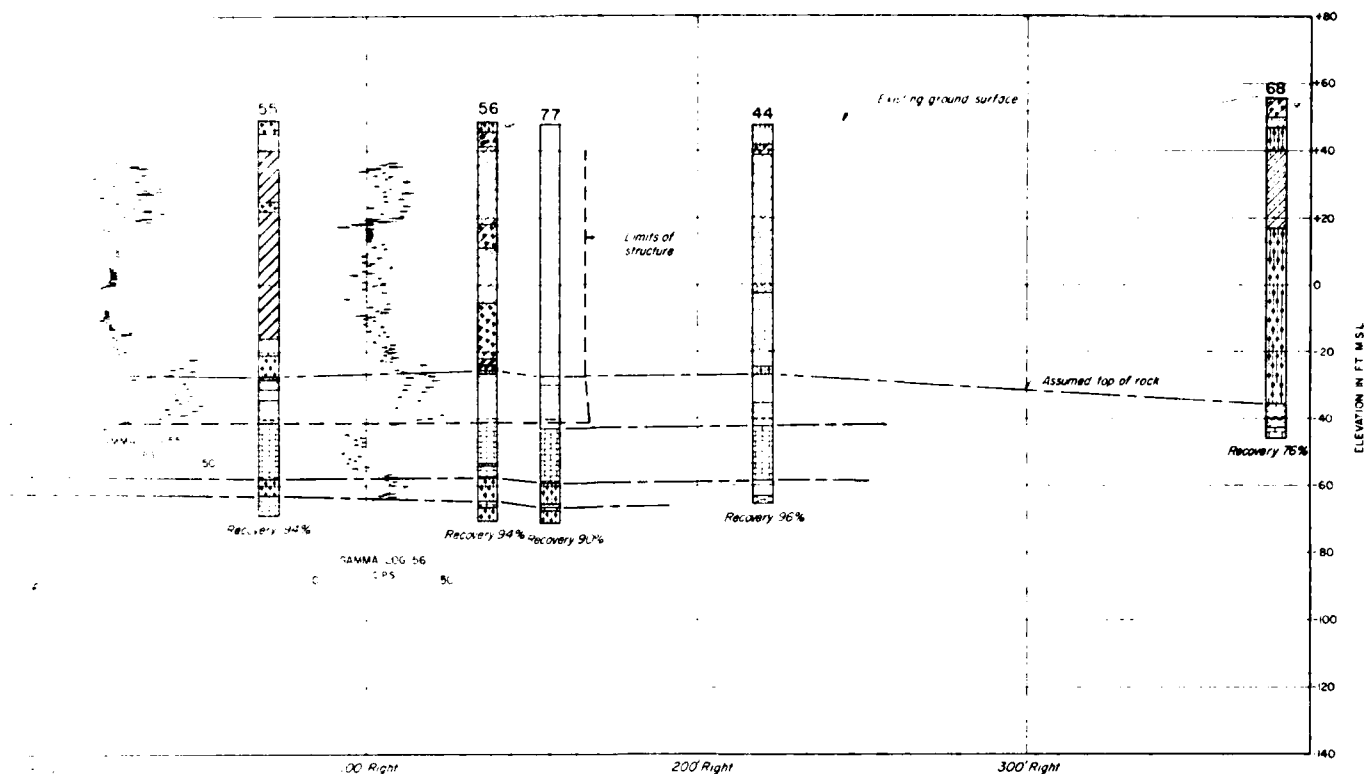
U. S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA	U. S. ARMY ENGINEER DISTRICT, CHARLESTON CORPS OF ENGINEERS CHARLESTON, SOUTH CAROLINA
POWERHOUSE FOUNDATION ANALYSIS	
APPENDIX "A"	
POWERHOUSE CROSS SECTIONS	
COOPER RIVER REDIVERSION PROJECT	
LAKE MOUTRIE AND BANTEE RIVER	
SOUTH CAROLINA	
DESIGNED BY CHIEF ENGINEER DISTRICT	CHECKED BY CHIEF ENGINEER DISTRICT
DATE: 10/22/72	DATE: 10/22/72
SCALE: AS SHOWN	SCALE: AS SHOWN
FEB 8/2002/704	



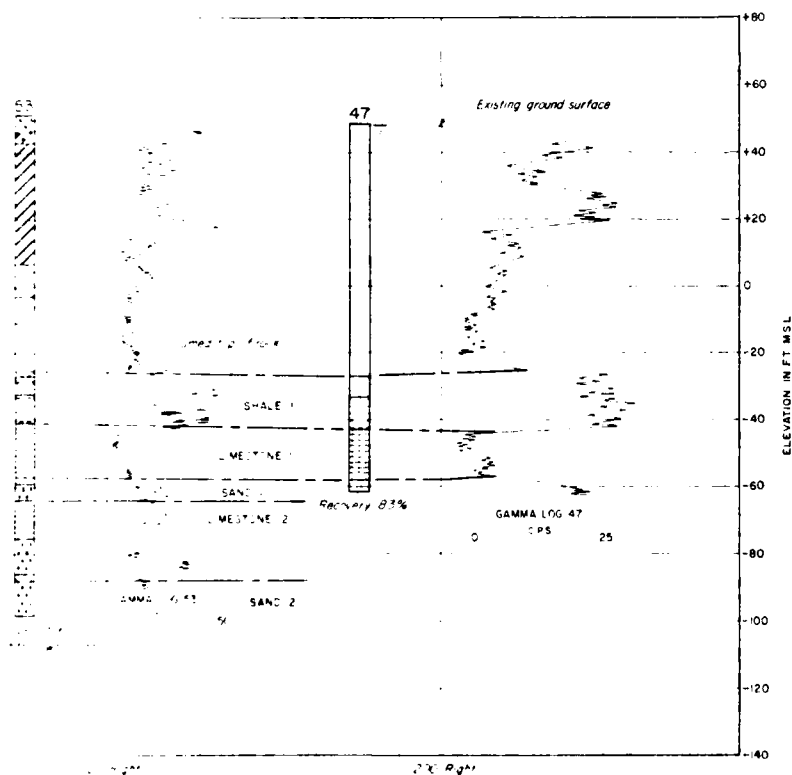
GEOLOGIC SECTION AT BA



GEOLOGIC SECTION AT BASELINE STA. 597+75 (D-D')



SECTION AT BASELINE STA 589+67(C-C')



NOTES:

- 1 For boring legend see plate 2
- 2 For boring and section locations see plate 1

U. S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA		U. S. ARMY ENGINEER DISTRICT, CHARLESTON CORPS OF ENGINEERS CHARLESTON, SOUTH CAROLINA	
POWERHOUSE FOUNDATION ANALYSIS			
APPENDIX A			
EXCAVATION AND BORING			
LOCATION PLAN			
COOPER RIVER REDIVERSION PROJECT			
LAKE MOULTRE AND Santee River SOUTH CAROLINA			
SUBMITTED	APPROVED	APPROVED	APPROVED
CHIEF, GEOTECHNICAL SECTION	CHIEF, FOUNDATION SECTION	CHIEF, CIVIL ENGINEERING SECTION	CHIEF, ELECTRICAL ENGINEERING SECTION
DATE 10 MARCH 1970	DATE 10 MARCH 1970	DATE 10 MARCH 1970	DATE 10 MARCH 1970

END

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